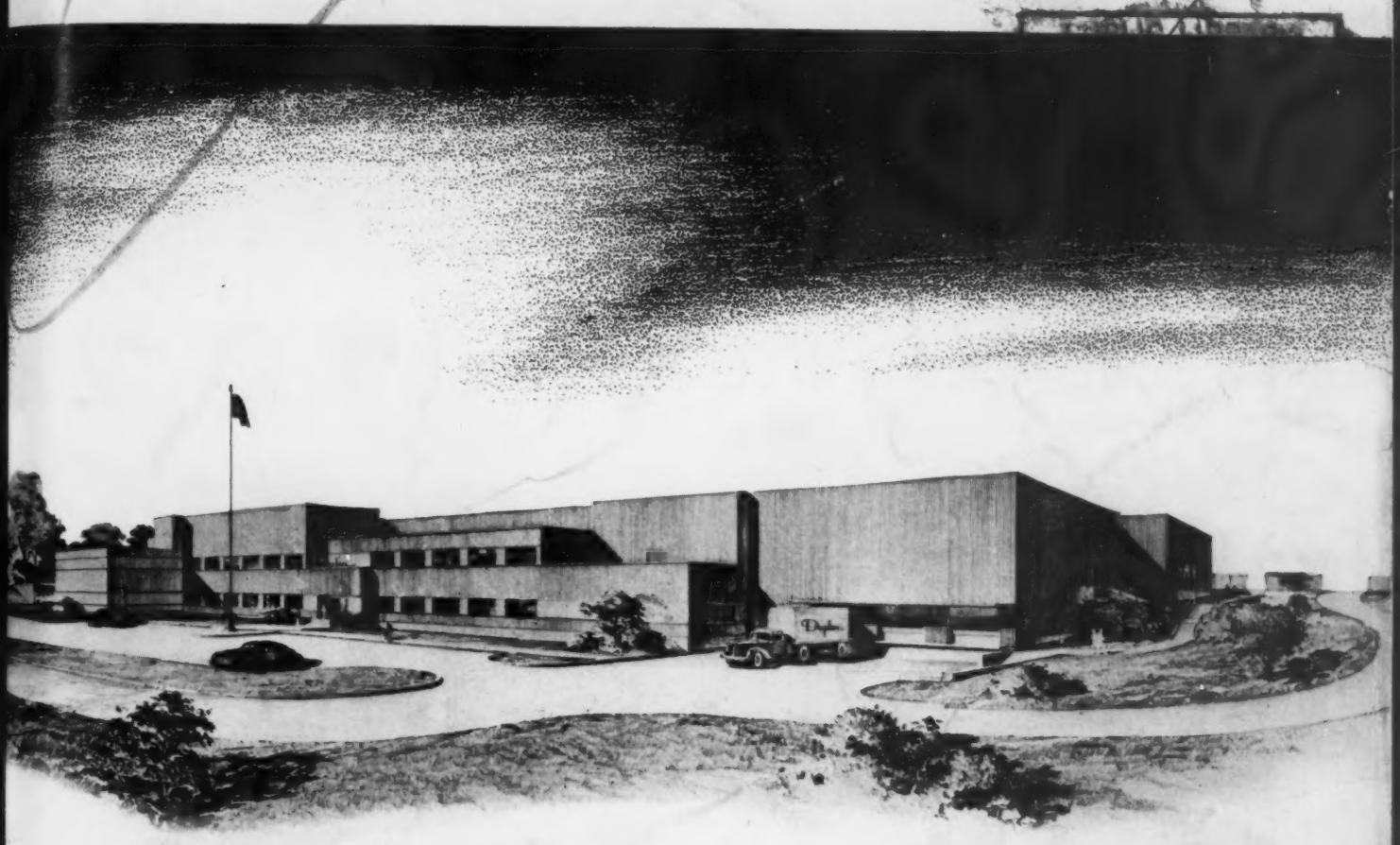
TECHNOLOGY DEPT.

TEXTILE WORLD

A McGraw-Hill Publication ---------- NOVEMBER • 1946



INDUSTRY *Improvement* PROGRAMS

ANNUAL MILL CHECK-UP NUMBER

Page 103

COMMERCIAL FACTORS CORPORATION

Fred'k Victor & Achelis, Inc. Established 1828

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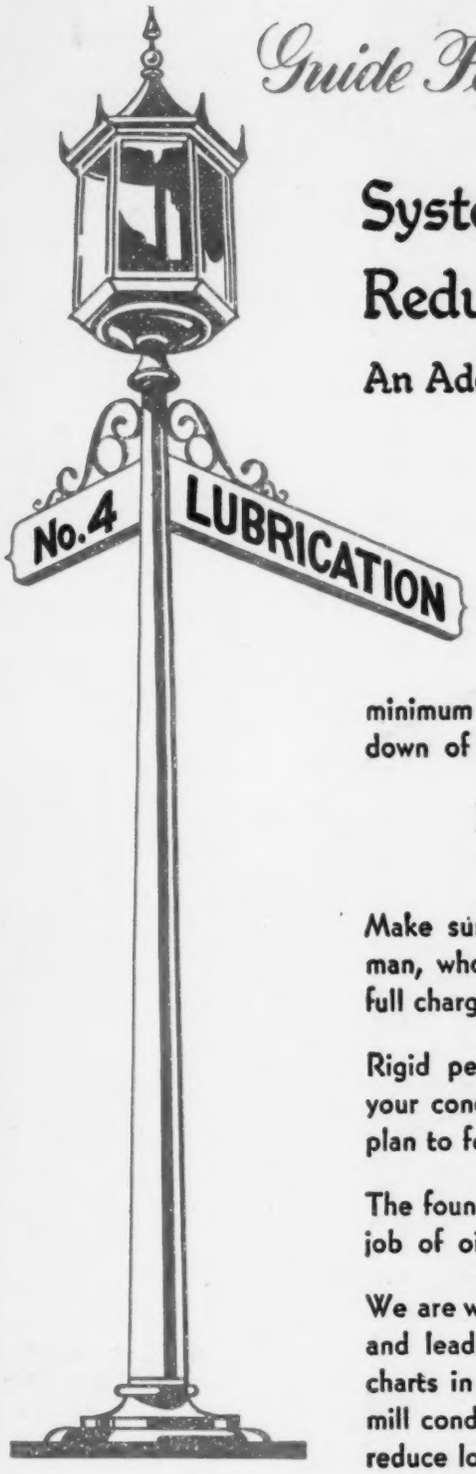


Guide Posts to Increased Production

Systematic Lubrication Reduces Costs

An Adequate Oiling Plan

Prevents undue wear of parts
Reduces Cost of Repairs
Increases life of looms

You can prevent undue wear of loom parts by installing and carrying out a well-planned schedule of lubrication and cleaning. It will reduce to a minimum expensive overhauling and the consequent shutting down of your looms with the loss of their production.

Lost Production Like Lost Time Can Never Be Regained

Make sure your looms are properly lubricated by giving to one man, who is thoroughly familiar with the loom and its operation, full charge of and responsibility for your oiling program.

Rigid performance tests will indicate the best oil and grease for your conditions. Draper Oiling Charts give you a well arranged plan to follow. See that each oiler has one and uses it.

The foundation of a good oiling system is to see that a thorough job of oiling and cleaning is done when the warp is changed.

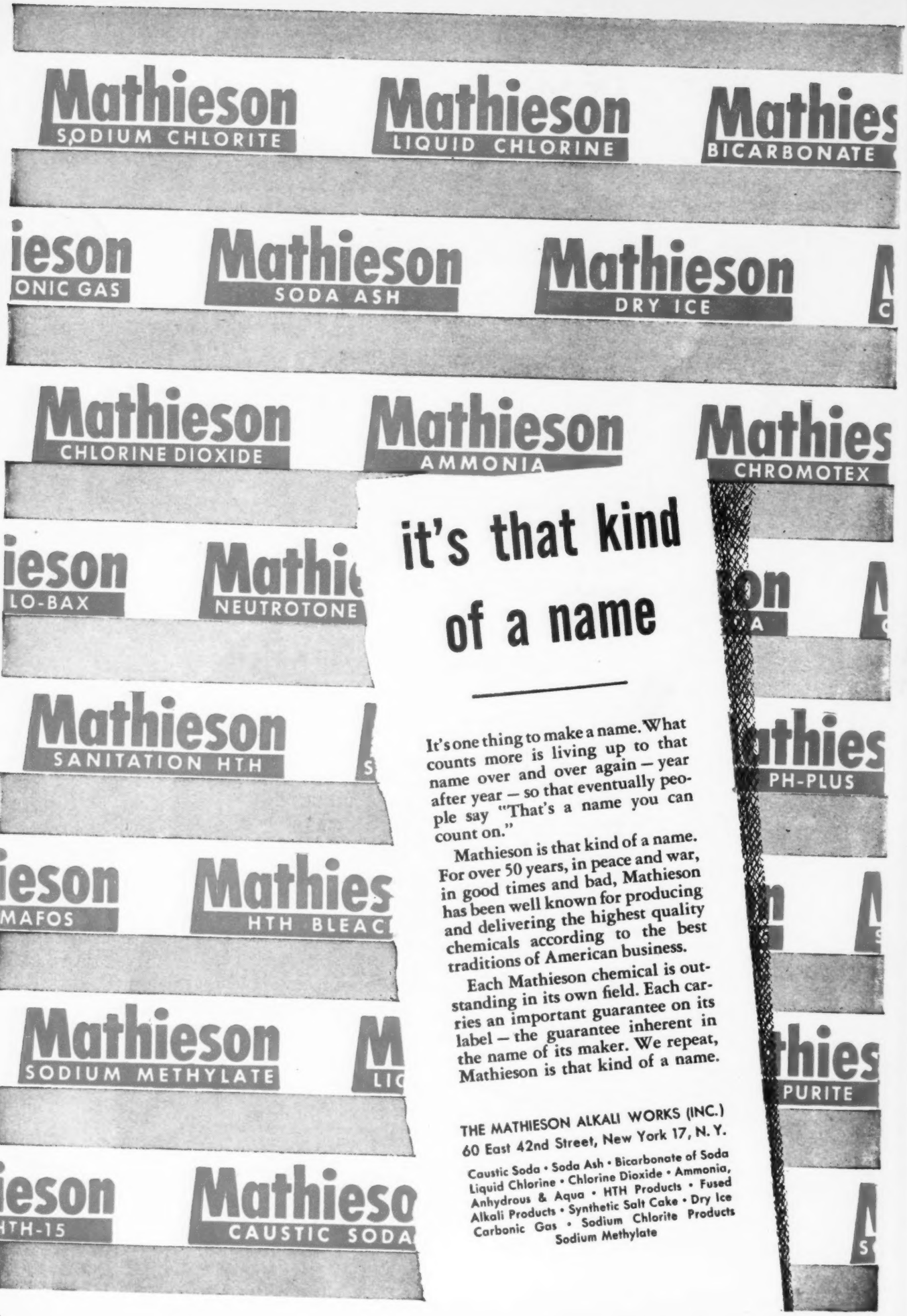
We are working with the American Society of Mechanical Engineers and leading oil companies to bring you new diagrammatic oiling charts in color. These charts are now being tested under actual mill conditions. You will find them helpful. They will help you reduce losses from human error.

An Adequate Oiling Plan will increase the efficiency of your looms and reduce maintenance costs.

Fourth in a Series

Of What Well-Managed Mills Are Doing to Get the Best Results in Weaving

DRAPER CORPORATION
HOPEDALE MASSACHUSETTS



it's that kind of a name

It's one thing to make a name. What counts more is living up to that name over and over again — year after year — so that eventually people say "That's a name you can count on."

Mathieson is that kind of a name. For over 50 years, in peace and war, in good times and bad, Mathieson has been well known for producing and delivering the highest quality chemicals according to the best traditions of American business.

Each Mathieson chemical is outstanding in its own field. Each carries an important guarantee on its label — the guarantee inherent in the name of its maker. We repeat, Mathieson is that kind of a name.

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Liquid Chlorine • Chlorine Dioxide • Ammonia,
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Alkali Products • Synthetic Salt Cake • Dry Ice
Carbonic Gas • Sodium Chlorite Products
Sodium Methylate

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TEXTILE WORLD

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THE *Long-Range* VIEW

Premium on Production Techniques

Many industries report poor productivity per worker, and most of us know of examples of employees who refused to produce more than a predetermined amount; but, fortunately, such examples are relatively rare in the textile industry. Compared to many another industry, that which produces fabrics can be proud of the willingness of its workers to use better and still better methods and machinery to produce more and more. For this, they have been rewarded with higher percentage wage increases than the average for the country.

As wages in the textile industry have risen, they have been met in part by increases in worker productivity (in part by higher prices). Few, if any, increases in productivity have been the result of employees working harder, rather they have been the consequence of simplifications and mechanizations.

During the sudden transition from an industry in which labor had been plentiful and cheap to one in which it is scarce and costly, the first step taken by mills has been to eliminate unnecessary operations and to cut out needless expenses such as those involved in short orders or in unprofitable items produced merely to maintain a "complete" line. The next step, barely begun, is to mechanize materials handling, a phase of textile manufacturing which is very costly in labor charges.

The third step, which should make rapid headway once the metal-working industries are fully rolling, is the development and adoption of improved low-labor-cost machinery for those operations which are already mechanized.

Of course, the foregoing three phases have always been factors in the development of the textile industry; but what many persons seem to overlook is that never before have they been such potent factors as now. One reason for their increased potency is the effect that synthetics are having on textile mills.

With the natural fibers, textile men have found it possible to make or lose more money in fluctuations of cotton or wool fiber prices than could be made or lost in manufacturing textiles (hedging notwithstanding). And natural fibers have been so variable that the lucky, or wise, adoption of blends which are both satisfactory and economical—by woolen mills in particular—has often made the difference between profit and loss.

Synthetics are not only stable as to price and properties but also exert a stabilizing influence on the natural fibers. For the first time, there is a relatively fixed factor in the industry against which other factors can be measured. Thus, cotton cannot hold its premium over viscose staple indefinitely. It is conceivable that the rayon price may go up, but it is more likely that cotton will come down. Even if rayon does go up, it will certainly not fluctuate daily or hourly, as do the natural fibers.

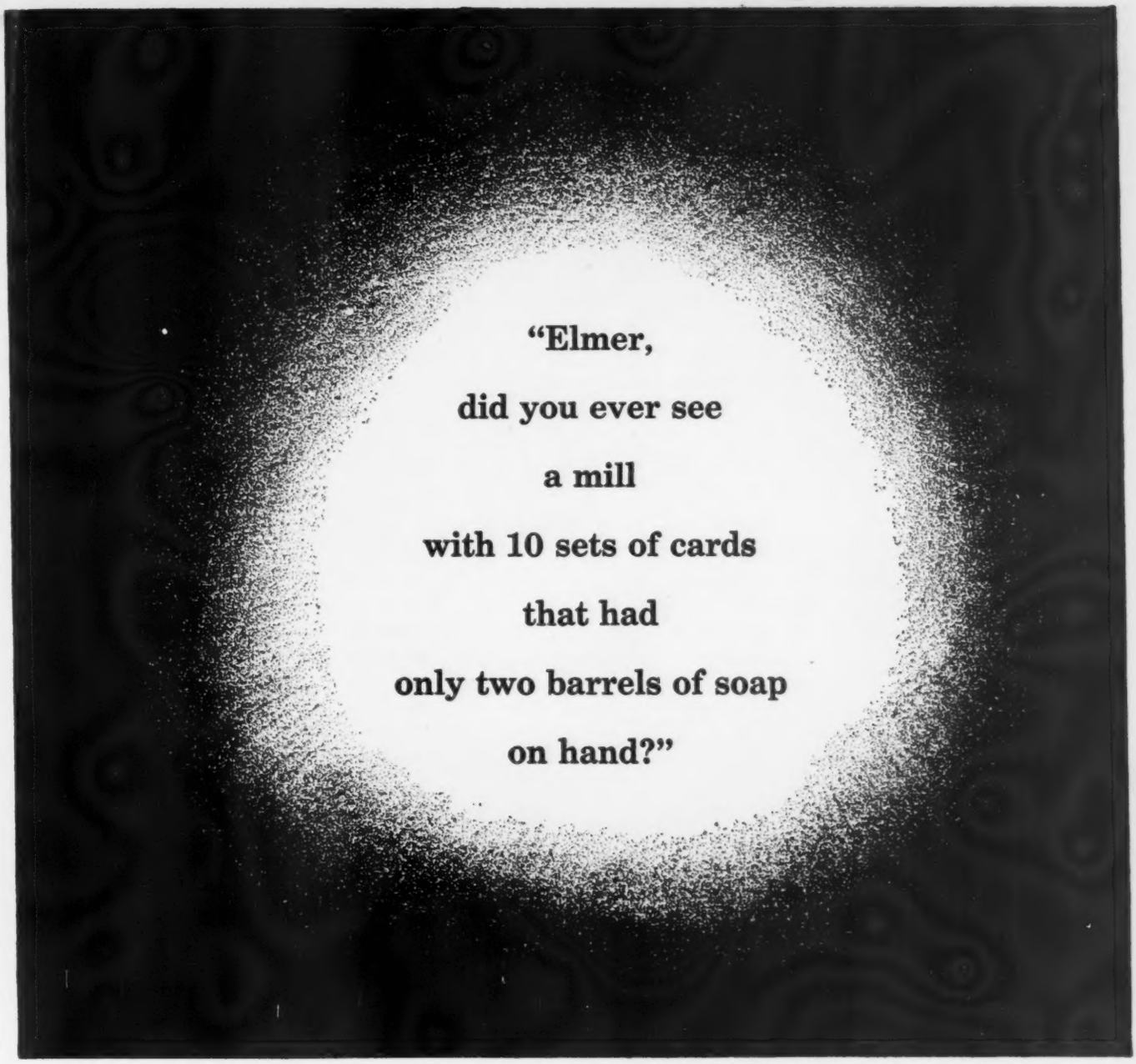
All this leads to our main point: Stability has placed a greater premium than ever before on good textile-production techniques. Savings made by good manufacturing, as contrasted to slipshod, as less likely now than ever before to be wiped out by market fluctuations; and the changing conditions have forced mills to recognize that, if labor costs can be reduced to a relatively inconsequential factor through justifiable mechanization, high wages cannot cause a product to be priced out of the market.

It is more than a coincidence that at recent meetings of the National Association of Cotton Manufacturers, the Textile Research Institute, and the Cotton-Textile Institute emphasis was placed on advancing manufacturing technology. Long ago this magazine recognized the trend and directed the energies of its staff of textile technicians toward doing all possible to disseminate useful, practical information on new machines, equipment, materials, and techniques.

Although for the first period in many years, mills have adequate funds to invest in new equipment, they cannot proceed so rapidly as they might wish due to shortages in steel and motors for machinery (and equipment), shortages in building materials, shortages in rayon and other synthetic fibers—and perhaps, before long, a shortage in cotton.

Since it is doubtful that wages will ever fully return to their former lows, and since the influence of synthetic fibers is certain to grow stronger as time goes on, it would be a mistake to look upon the present period of technological development in the industry as a fleeting one. A profound and permanent transformation is taking place.

C. H. Bendigo



THE statement quoted above was made recently by the superintendent of a woolen mill which, since adopting FYBROL 1115, *has not used a single ounce of soap!*

This mill, along with many other leading wool and worsted mills, is in a fortunate position because FYBROL 1115*—the *original* water-soluble, self-scouring wool oil—does not depend for its efficiency on *scarce fats and oils.*

Non-gumming, evenly penetrating FYBROL 1115's better coverage improves mill efficiency . . . leaves at least 50% less residual oil after scouring, increases card production, and improves spinning. Easier to use and more economical than conventional wool and worsted oils. Proved by experience in mill after mill, on all types of blends.

Let us help you solve your fibre lubricating problems. Write for a free sample of FYBROL 1115 today.

*Patents Pending

Textile Chemicals Division

L. SONNEBORN SONS, INC.

Dept. W-11, 88 Lexington Avenue, New York 16, N. Y.
Plant and Laboratories: Nutley, N. J.
Refineries: Petrolia and Franklin, Pa.

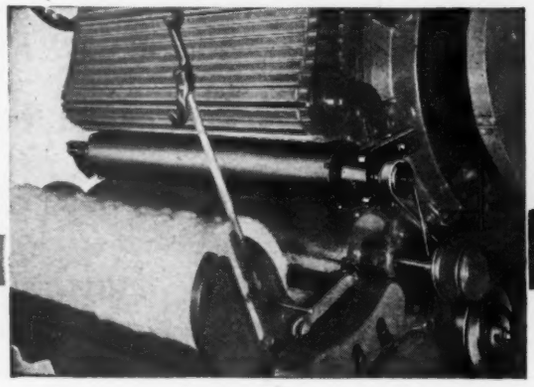
Wool and Worsted Oils • Petroleum Sulfonate Bases • Detergents and Dyeing Oils • Penetrants • Delustering Specialties
Warp Dressings • Finishing Sizes and Softeners • Water Repellents • Sulfonated Oils • Wetting and Rewetting Agents

Extra Cleaning at No Additional Operating Cost

. . . an advantage which no mill can overlook today

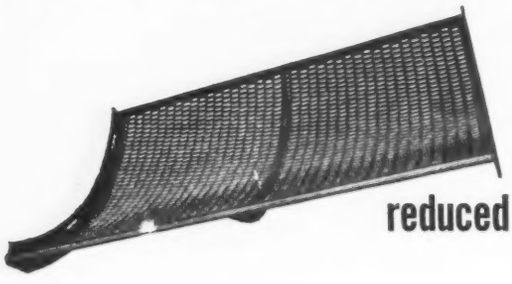
Buyers of yarns and fabrics are becoming more and more critical of imperfections such as neps, peppery leaf and broken seed fragments in their goods.

One of the well-known mills in the "quality class" has recently completed a series of tests on the Saco-Lowell Continuous Stripper and Waste Control Screen which have been in operation in their mill for the past year. They found that in addition to the extra cleaning effected by this equipment the return on their investment in one year was approximately 86%. A survey of your plant might show how the Continuous Stripper and Waste Control Screen could also be of definite advantage to your mill.



investment in the Continuous Stripper returned in one year 86%

Waste Control Screen reduced neps 39%

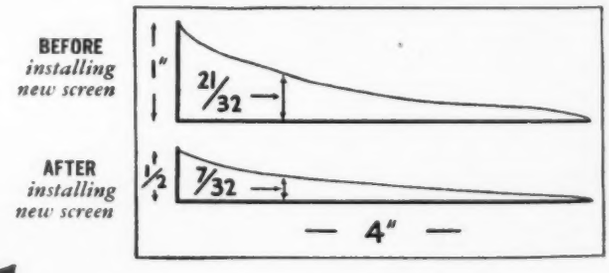


BEFORE *installing new screen* — **.780 neps** *per sq. inch*

AFTER *installing new screen* — **.481 neps** *per sq. inch*

reduced foreign matter 26%

reduced mean staple length in fly 67%



Saco-Lowell Shops

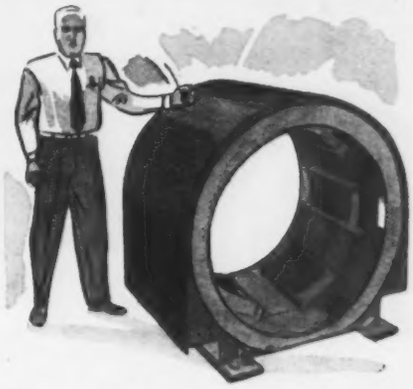
BOSTON, MASSACHUSETTS

Charlotte Greenville Atlanta

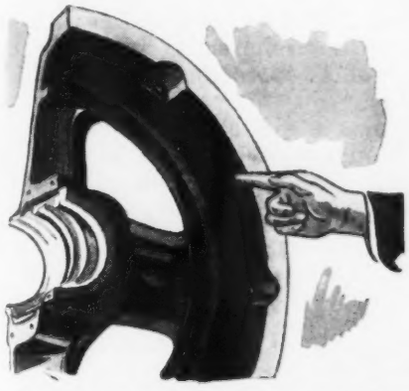
"You Never Saw Such Trouble-free Motors..."

Which Is Another Way of saying they *stand up better* than any other make we've used on this job!" Strong words, but they describe exactly how this customer feels about the 500-hp, open type, bracket bearing Allis-Chalmers motors he started using back in '35.

Since Then He's Ordered 14 *identical* motors for mine pump service! Yes, in almost every industry you'll find these 250 hp and up, medium and high-speed motors paying their way on toughest drives. A check into several of their unusual features will reveal *why*.



Take Yokes, for example. *Steel,* not cast iron. Result: they've got more strength, feet won't break off, there are no projections inside or out to catch dirt. Furthermore, yokes are solid . . . have no openings to admit dust or dirt during non-operating periods.



And Bearing Brackets are *extra*-deep . . . giving greater protection to stator winding coil ends. They're oil leak-proof too. Further, these motors are quiet in operation. Liberal air paths keep air velocities low. Enclosed type yokes reduce noise. Magnetic noise is kept to a minimum. *Yes, from every angle, A-C builds quality into motors!*

"A-C" Means Quality — Clear Through!

SMALL OR LARGE, in a range of 1 to 7,000 hp, you're *sure* of top quality when you specify Allis-Chalmers motors!

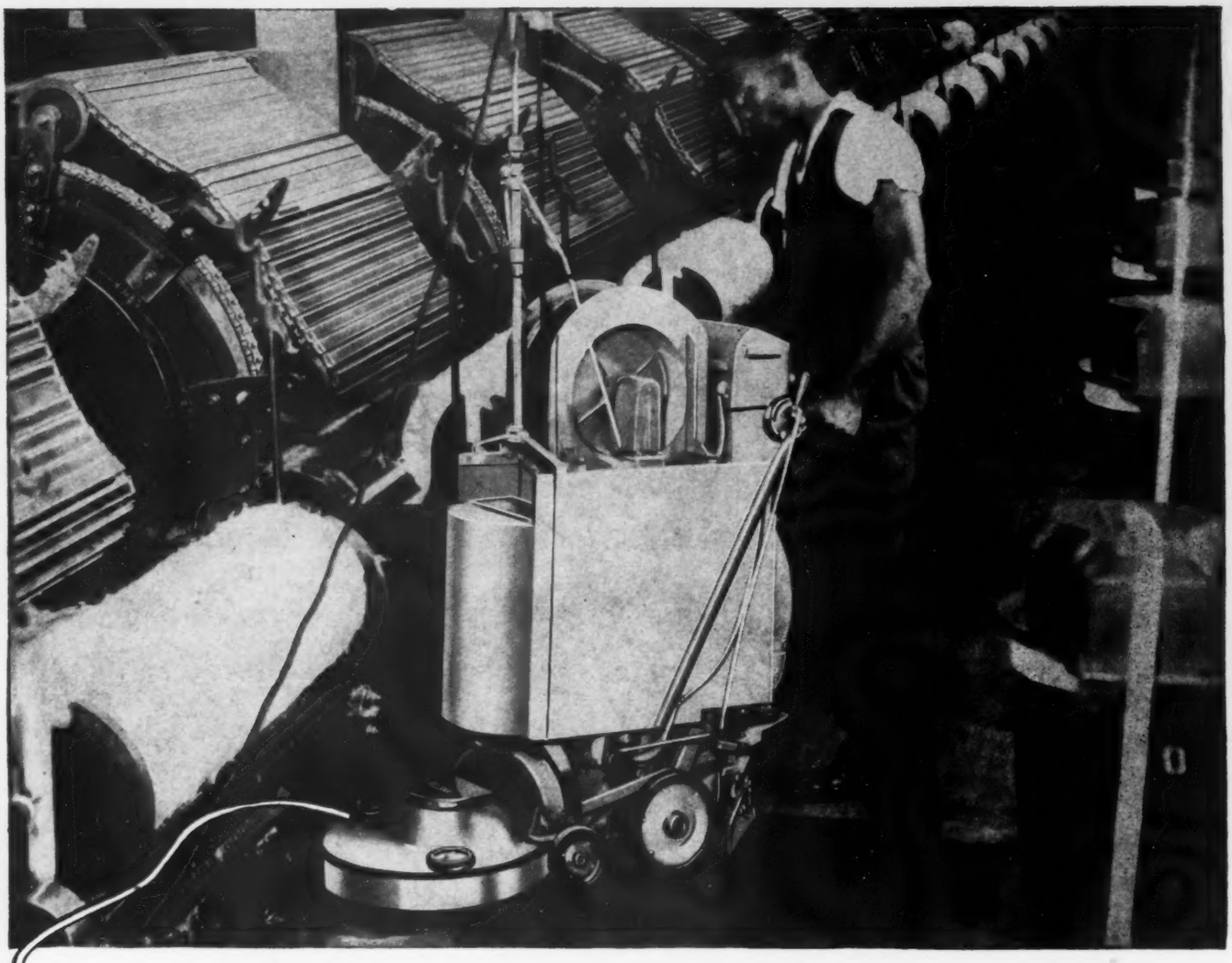
Check their rigid, distortionless stators . . . their tough insulation specially treated to resist deterioration, moisture and mild acids . . . their long-life rotors . . . their rigid frames that keep bearings protected and in perfect alignment.

For the *full* story of liberal Allis-Chalmers construction, get in touch with your nearby A-C dealer or sales office. ALLIS-CHALMERS, MILWAUKEE 1, WIS.

ALLIS CHALMERS

One of the Big 3 in Electric Power Equipment — Biggest of All in Range of Industrial Products

A 2118



To Solve YOUR Floor-Cleaning Problem

CHOOSE *A Job-Fitted Finnell!*

Since individual floor-cleaning problems differ widely, no one machine can serve the needs of all mills effectually and economically. The area and arrangement of the floors, whether congested or open, type of flooring and production — these determine the equipment. Recognizing that fact, and guided by four decades of practical experience in developing and manufacturing floor-maintenance machines, *Finnell* offers *more than a score* of models and sizes. From this complete line, you can choose *job-fitted* equipment — equipment that fits the need in size as well as model. A *Job-Fitted Finnell* provides the greatest brush coverage consistent with area and arrangement of the floors and other conditions — whether the job calls for wet scrubbing, dry scrubbing, or dry cleaning . . . or for waxing or polishing.

The *Finnell* illustrated was developed to meet the need for a Scrubber-Vacuum sufficiently compact to use in narrow aisles and weave room alleys. It is a complete cleaning unit *all in one* — applies the cleaning solution (or scouring powder), scrubs, rinses if required, and picks up. Has a cleaning capacity of approximately 3,750 sq. ft. per hour. *Finnell* also makes a full line of *Cleansers, Sealers,* and *Waxes,* as well as *Mop Trucks* and other accessory equipment. For consultation, free floor survey, or literature, phone or write nearest *Finnell* branch or Finnell System, Inc., **1911** East Street, Elkhart, Indiana.

FINNELL SYSTEM, INC.

Pioneers and Specialists in

FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES

BRANCHES IN ALL PRINCIPAL CITIES

Clean up with TEXAIR

MOST ECONOMICAL HOSE EVER BUILT FOR MILL USE!

HERE'S an outstanding new hose designed to last many times longer than any yet developed for mill clean-up work. It's Texair Hose — Goodyear Research's lastest contribution to greater cotton mill efficiency.

Texair is a light, supple, non-kinking air hose of unusual strength and stamina. It is built throughout of oil-resistant synthetic rubber — won't soften or weaken through contact with oil on machines or in the air line.

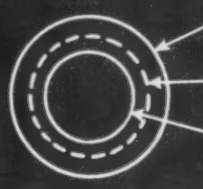
Its cover is tough and robust, and built smooth so you can easily pull it across floors and around corners. Reinforcement is a braided ply of strong cabled yarn that provides extra strength to withstand snaking and "tow-rope" strains. Made in 3/8- and 1/2-inch diameter sizes, it will handle pressures up to 125 pounds.

By every test, Texair is the finest and most economical mill hose ever built. Order it today from the G.T.M. — Goodyear Technical Man — or your Goodyear distributor. For further details, write: Goodyear, Akron 16, Ohio or Los Angeles 54, California.

GOODYEAR INDUSTRIAL RUBBER PRODUCTS

GTM-Specified TEXAIR HOSE

for cotton mill clean-up service



A Smooth, tough, abrasion- and oil-resistant cover

B Reinforcing braided ply of cabled cotton yarn

C Non-porous, oil-resistant synthetic rubber

FOR BELTING, HOSE, MOLDED GOODS AND PACKING built to the world's highest quality standard, phone your nearest Goodyear Industrial Rubber Products Distributor.

GOODYEAR

THE GREATEST NAME IN RUBBER

Texair—T.M. The Goodyear T. & R. Co.

what do you mean, a new fabric?

It was only a short while ago when there were only four major fabrics . . . woven from the four natural fibers: cotton, linen, silk and wool. Then rayon, the synthetic fiber was produced, and the industry learned how to weave and blend rayons.

Today Monsanto, in Resloom, has developed a unique new melamine resin. This new textile chemical is fused inside the core of any natural or synthetic fiber. The result of this treatment creates such amazing new improvements and such valuable new characteristics that actually a range of new fabrics is made possible.

For example . . .

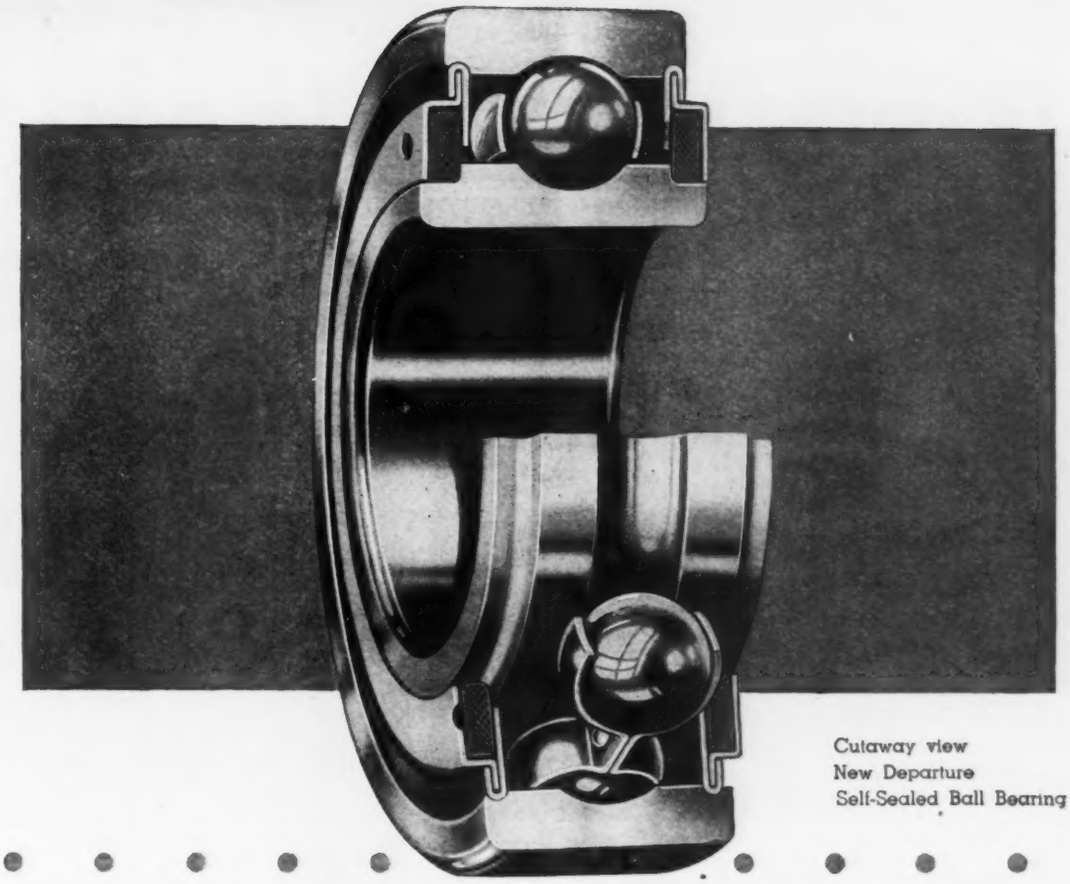
. . . Resloom treatments on rayon dress fabrics make them *permanently crush resistant, shrink resistant and stable.* Yet the fabrics look and feel exactly like the original. Resloom is unaffected by wear, washing or dry cleaning. Resloom is there for the life of the fabric, imparting *lasting character* to the garment.

Moreover, Monsanto exercises complete control over the standards of materials and carefully selects the firms handling Resloom treated products. In other words, no low grade materials or methods will be allowed the "improvement" by Resloom. Your assurance and your guide to finding these wonderful new serviceable fabrics is the colorful Resloom tag . . . to be found in more and more leading stores all over America.

For full information on Resloom and the new fabrics that it's helping create, write: MONSANTO CHEMICAL COMPANY, 140 Federal Street, Boston 10, Mass.

Resloom: Reg U. S. Pat. Off.

MONSANTO
CHEMICALS AND PLASTICS
SERVING INDUSTRY...WHICH SERVES MANKIND



Cutaway view
New Departure
Self-Sealed Ball Bearing

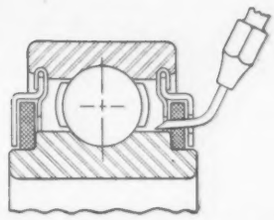
Still lubricated for life

. . . now has a new plus feature

In the majority of applications you can install it —and forget it—because this bearing is, for all normal conditions, *lubricated for life*, with dirt sealed *out* and the lubricant sealed *in*.

But *now*—for the *unusual* applications—where excessive heat or other abnormal circumstances were formerly too tough for a single supply of lubricant, these bearings can be relubricated quickly and easily. There is no removal of seals—no nipples, grease passages or plugs required.

Thus, this one type of New Departure Self-Sealed Ball Bearing gives you dependable performance for *both ordinary* and *unusual* conditions, extending its use to *many additional* applications. New Departure originated the self-sealed bearing. Over 110 million are in successful operation. Ask for informative Booklet 1B.



In most applications you never need relubricate a New Departure Self-Sealed Ball Bearing — because it is lubricated-for-life.

When operating under the abnormal conditions described at left, you may, at infrequent intervals, relubricate as follows:

Simply insert the "hypodermic" nozzle of the lubricating gun through small hole in seal member. Nozzle penetrates the flexible inner seal, cleaning itself as it enters. Lubricant is injected and hole in seal closes completely as nozzle is withdrawn. No dirt can get in.

UNITED SERVICE MOTORS

Nation-wide replacement and small order service, wherever you see this sign.

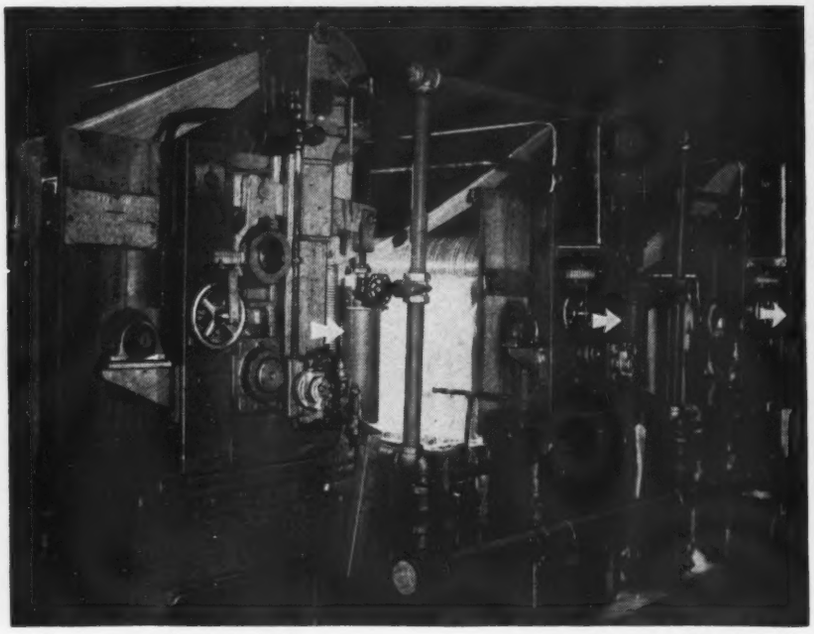
Nothing Rolls Like a Ball

NEW DEPARTURE

BALL BEARINGS 2450

NEW DEPARTURE • Division of GENERAL MOTORS • BRISTOL, CONN. • Branches in DETROIT, CHICAGO, LOS ANGELES

THE MOTOR PUMP HAS THAT EXTRA- MARGIN OF RELIABILITY



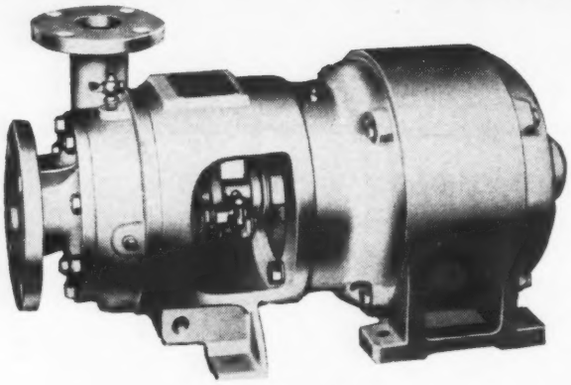
Photo—Courtesy Riggs & Lombard

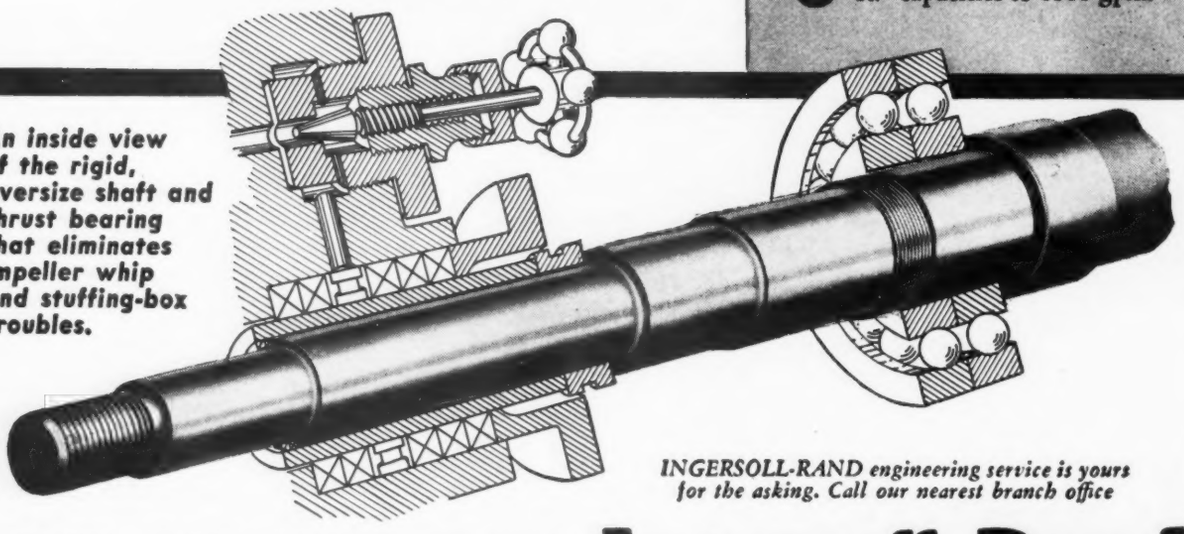
Here is a pump built for heavy-duty work where minimum attention and continuous service are "house rules."

CONSIDER THESE MOTORPUMP FEATURES:

1. Single, oversize shaft for both motor and pump designed for a maximum deflection of only .001" at the end. This prevents impeller whip and reduces stuffing-box troubles to the minimum.
2. Oversize bearings have more than twice the radial and thrust capacities of standard motor bearings.
3. Simplicity — there is only one moving part — the rotor.
4. Most advanced metallurgy known to hydraulic engineers.
5. 80 years of pump building experience are built into the Motorpump.
6. Sizes 1/4 to 50 hp.—heads to 600 ft.—capacities to 1800 gpm.

Continuous Washer





An inside view of the rigid, oversize shaft and thrust bearing that eliminates impeller whip and stuffing-box troubles.

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CONDENSERS • CENTRIFUGAL PUMPS • OIL AND GAS ENGINES

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Firestone *Velon** FILAMENT

FREES FABRIC DESIGN

Now you can go "all out" on color and pattern without worrying about practicality in end use. Firestone's amazing new textile filament, *Velon*, makes many fabrics, for many purposes supremely practical.

Cleans like magic. Because the thread is non-porous, dirt and stains simply can't cling. *Velon* wipes clean as new with a damp cloth.

Impervious to elements. *Velon* sheds water like a duck. And because the color is inherent in the monofilament, sun, washing and exposure can't fade or change its color.

Practically wear-proof. Each man-made *Velon* fibre is a single thread of giant strength, so the cloth is amazingly resistant to abrasion, scuffing, snagging.

Count on *Velon* for new markets, greater sales volume and higher mark-ups in such fields as indoor, outdoor, commercial and transportation seat upholstery, for bags, shoes, belts, lampshades, draperies, shades, awnings, wall-trim, luggage.

Available, adaptable. Firestone engineers will be glad to consult with yours and show you how, without major changes, *Velon* may be adapted to your manufacturing methods, and indeed, save production steps.

FREE—Write Firestone, Akron, for your copy of full-color *Velon* booklet and samples of yarn.

*TRADE MARK

REDUCES LAPPING

8 advantages of Accotex Cots

1. **LONG SERVICE**—Accotex Cots are tough. And they can be rebuffed 5 or 6 times.

2. **GOOD DRAFTING**—Accotex Cots retain their excellent grip, because their cork-and-rubber composition resists slicking.

3. **REDUCED EYEBROWING**—The resistance to slicking minimizes eyebrowing.

4. **REDUCED LAPPING**—Accotex Cots have little affinity for textile fibers and are non-sweating even in humid weather.

5. **GOOD START-UP**—Accotex Cots are non-thermoplastic and resist flattening.

6. **SOLVENT RESISTANCE**—Accotex Cots are not affected by oil, water, dyes, or commonly used textile solvents.

7. **SEAMLESS CONSTRUCTION**—Accotex Cots have no seams, no structural weaknesses to cause failure in service.

8. **QUICK ASSEMBLY**—Accotex Cots are ready glued for easier, quicker assembly.

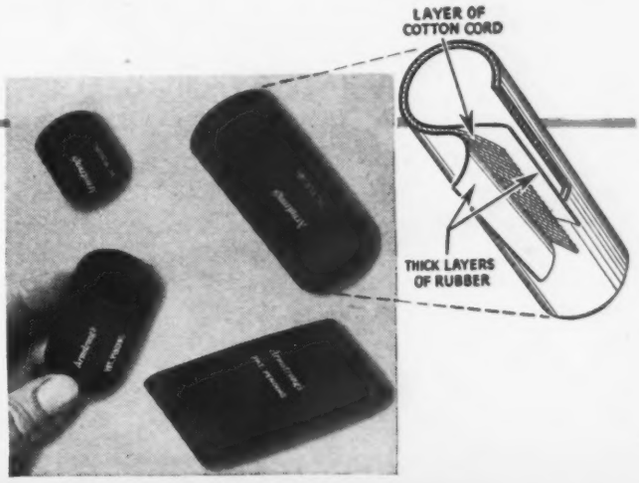
CORK COTS
ACCOTEX APRONS

Accotex Roll Coverings won't attract fibers . . . won't sweat

YOU GET greater freedom from top roll lapping with Armstrong's Accotex Cots. That's because Accotex is made of a specially developed cork-and-synthetic-rubber composition. This material does not attract textile fibers. It is not affected by temperature and humidity changes, and it does not sweat.

This combination of cork and synthetic also provides other important spinning advantages. Tough synthetic rubber makes Accotex Cots last longer. High-friction cork provides consistently better drafting for consistently high yarn strength. Cork also helps prevent slicking and reduces eyebrowing. What's more, Accotex Cots can be rebuffed five or six times.

These advantages, together with those at left, explain why more and more mills are switching to Armstrong's Accotex Cots . . . why they are serving more spindles than any other synthetic cot. Your Armstrong representative will gladly help you arrange test installations on your own frames. Ask for samples, prices, and complete information. Or write today to Armstrong Cork Co., Textile Products Dept., 8311 Arch Street, Lancaster, Pa.



Also by the makers of Accotex Cots

. . . the Accotex Apron

The exclusive Armstrong construction shown at right is the reason the Accotex Long Draft Apron gives you more production, cleaner-running work, reduced lapping, and better grip. This seamless apron is made of heavy layers of non-oxidizing synthetic rubber which enclose a sturdy, non-stretch cord interliner. This special construction is the result of the same specialized research and technical skill that produced the Accotex Cot.

ARMSTRONG'S ACCOTEX COTS

● *Built by Cocker Machine & Foundry Co.*

assuring High Speeds for ballers

The high speeds at which this baller runs would be troublesome without the smooth, continuous performance of antifriction bearings—and these antifriction bearings are SKF. That means less power to start . . . less to keep going. It means *rolling alignment* to eliminate bearing binding resulting from shaft deflections, distortions or weave. It means equalized load distribution . . . high load carrying capacity. And every SKF Bearing is protected by an SKF housing against lubricant leakage damaging stock . . . against the intrusion of dirt, lint and water. In warping machinery of all kinds, the answer to the need for speed and cleanliness is SKF. 6070

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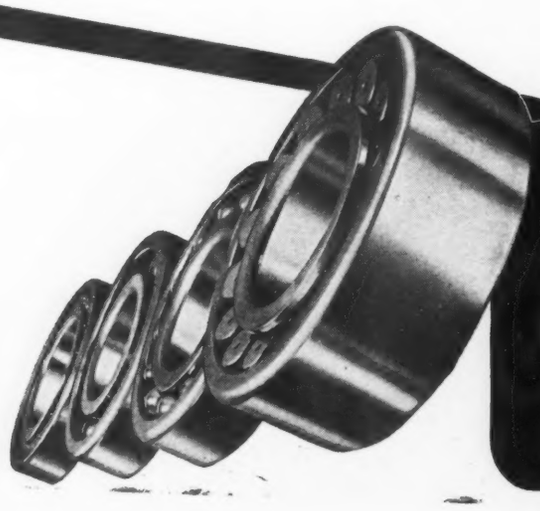


SKF
Puts the RIGHT BEARING in the RIGHT PLACE

SANDOZ PRESENTS *The color achievement of the month*

Tiger Bright BY STONECUTTER

Off the looms of Stonecutter comes this dramatic reproduction, in tissue faille, of a tiger print . . . another Stonecutter "Fabric of Distinction" that is having breath-taking reception in fine stores and drawing rooms across the country.

Contributing to the stunning effect of Stonecutter fabrics are colors by Sandoz—colors that fulfill the designers' intentions in mood and spirit.

Firms like Stonecutter Mills Corporation also benefit, by having Sandoz among their suppliers, from technical achievements that give them new efficiency in handling. For example: Sandoz' new Pyrazol Fast Blue FLL, a noteworthy addition to their Pyrazol Fast range of fast-to-light direct colors —a blue possessing outstanding fastness to light both before and *after* the urea formaldehyde aftertreatment.

For acid, chrome or direct dyes . . . or auxiliary chemicals . . . for both natural and synthetic fibres . . . be guided by the successful "color achievements" you have been seeing in these Sandoz advertisements. Sandoz application laboratories are located in New York, Boston, Philadelphia, Los Angeles, Charlotte, Toronto, where stocks in wide range are carried. Other branches in Chicago, Paterson and Providence.

SANDOZ CHEMICAL WORKS, INC., 61 VAN DAM STREET, NEW YORK 13, N. Y.

SAND *thinks ahead with textiles* S SANDOZ

FOR TOMORROW'S
SUPERFINISHES...
PERKINS
B. F. PERKINS & SON, INC.
HOLYOKE · · · MASSACHUSETTS

SHORTEST DISTANCE

Manufacturers all over the world are looking to SUPREME for the answer to economy, performance, and quality in the production of Jersey Fabric . . .

And the answer is the Model MJ Supreme Jersey Circular . . . the machine that represents more than thirty years of specialized experience in the Knitting Industry . . .

the machine that has achieved a production rate of 100 yards of fabric an hour.

The high speed MJ Model is constructed in sizes 6″ to 30″,

and boasts a great variety of horizontal stripes within its great range of feeds.

(Model Illustrated, 64 feeds)

Find out for yourself the amazing capabilities of Model MJ.

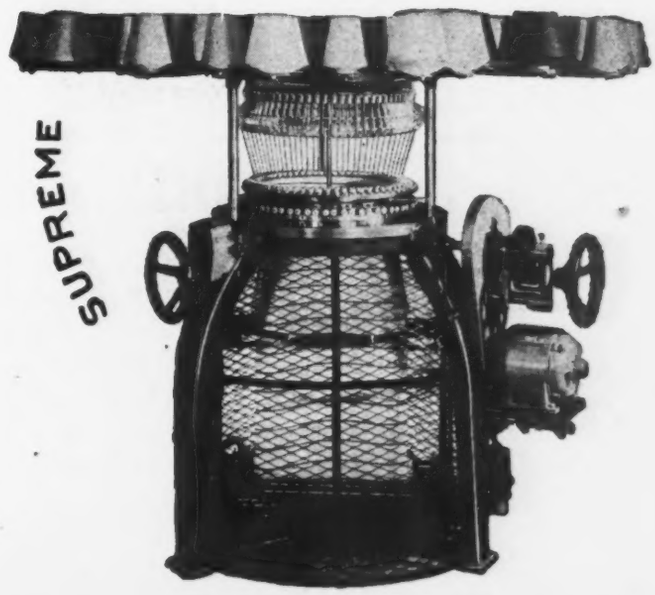
Write now for the illustrated catalog.

Or, better still,

see the Model MJ in operation at a Supreme showroom or factory.

JERSEY CIRCULAR MACHINES

SUPREME



SUPREME KMCO

SUPREME

KNITTING MACHINE CO., inc.

105 JOHNSON AVE. BROOKLYN 6, N.Y. U.S.A.

NOW . . . **right now** . . . is the time to work out your plans for Weaveroom Modernization, **and bind them in with your 1940 budget.** For the New Year, with its new demands, will sharply increase [illegible] weaveroom effi[illegible] concerned with the industry. It protect[illegible] sumer by giving him [illegible]

. . . and it still is — with one revision!

When the page above was published, C&K advocated . . . *and still does* . . . this first line of self-defense against the future, for every weaving mill: A systematic and tangible replacement fund, definitely earmarked and set aside for the purchase of new looms. And back in 1940, a yearly replacement of *10% of a mill's looms* was recommended.

But that was before the war . . . before looms were subjected to 4 years of *accelerated depreciation* under all-out operating conditions.

So today that figure of 10% will stand careful re-examination, in the clear light of this fact: The total depreciation, as of today, can be accurately figured only by combining that accelerated wartime depreciation with the depreciation prevailing since then. Therefore, today, the yearly loom-replacement figure is higher than previously recommended, depending on the mill, the age and state of its looms.

Your funds, accumulated against this higher depreciation, will stand up and bridge the fiscal gap between present equipment and new C&K Looms. *And then*—your new C&K Looms will repay your investment by higher operating speeds and finer fabrics.

Crompton & Knowles Loom Works

WORCESTER 1, MASSACHUSETTS, U. S. A.
PHILADELPHIA, PA. • CHARLOTTE, N. C. • ALLENTOWN, PA.
Crompton & Knowles Jacquard & Supply Co.
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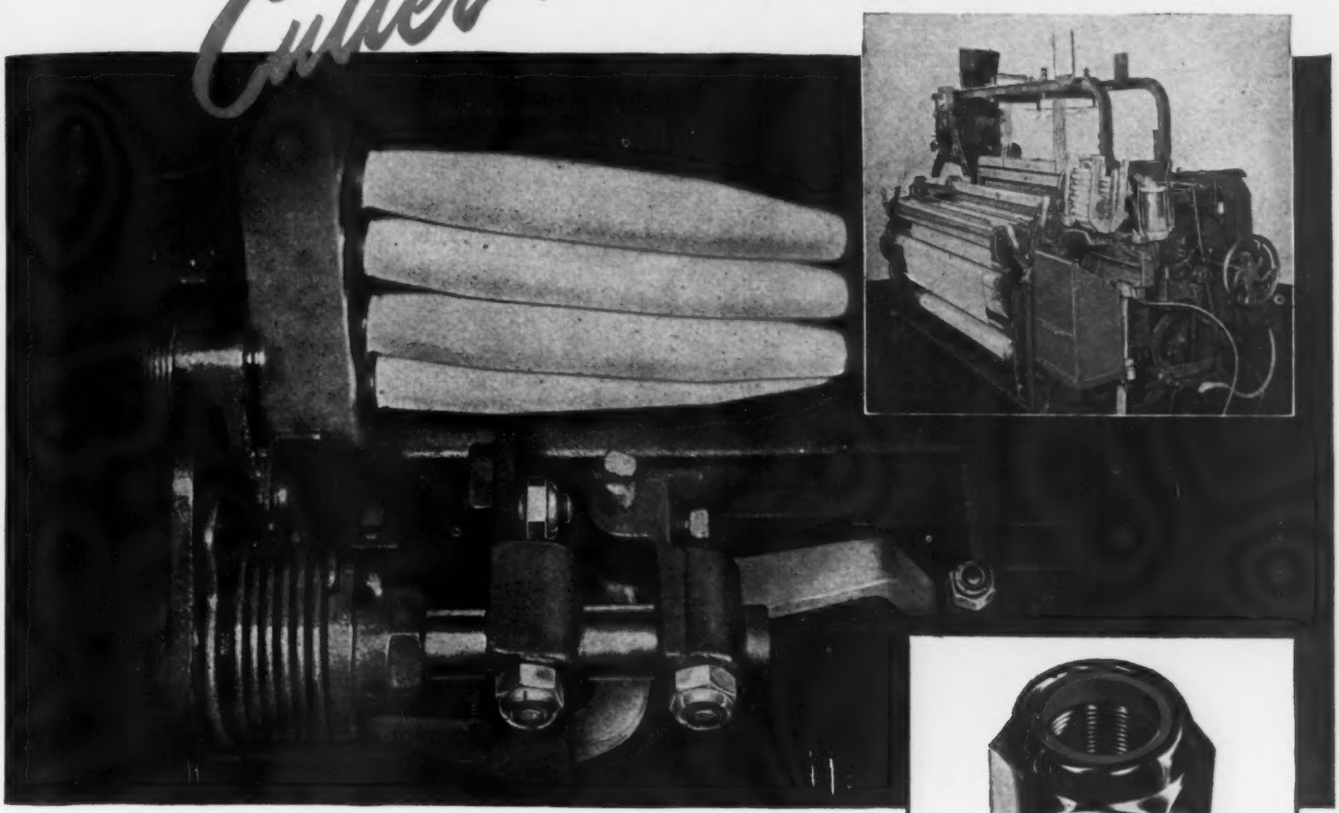
between Today's Knowledge . . and Tomorrow's Looms

SELF-LOCKING *Prevents Cutter Damage* **CAUSED BY VIBRATION-LOOSENED PARTS**

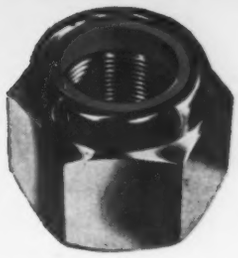


The Red Elastic Collar protects loom alignments against IMPACT! VIBRATION!

Every slam of the picker stick; every wham of the picker cam builds up a continuous series of violent vibrations to the thread cutting device and feeler support. These vibrations can loosen an ordinary fastener and seriously affect alignments. Misalignments cause 'dragged in' fillings . . . damaged shuttles . . . and dulled cutter blades from hitting the box front. The result is unnecessary down time for repairs and the running of 'seconds'.

Here again, ESNA Elastic Stop Nuts successfully replaced ordinary fasteners that cannot withstand this terrific loom Impact and Vibration. The Red Elastic Collar—in the Elastic Stop Nut—is self-locking against Vibration. It permits easy adjustments and continuous reuse. Order Elastic Stop Nuts for maintenance. Specify them on new equipment. Or let ESNA study your fastener problems. Address: Elastic Stop Nut Corporation of America, Union, New Jersey. Sales Engineers and Distributors are conveniently located in many principal cities.

ESNA
TRADE MARK



LOOK FOR THE RED COLLAR THE SYMBOL OF SECURITY

It is threadless and permanently elastic. Every bolt—*regardless of commercial tolerances*—impresses (does not cut) its full thread contact in the Red Elastic Collar to fully grip the bolt threads. In addition, this threading action properly seats the metal threads—and eliminates all axial play between bolt and nut threads.

All ESNA Elastic Stop Nuts—*regardless of size or type*—lock in position anywhere on a bolt or stud. Vibration, impact or stress reversal cannot disturb prestressed or positioned settings.

ELASTIC STOP NUTS

INTERNAL WRENCHING

ANCHOR

INSTRUMENT MOUNTING

SPLINE

CLINCH

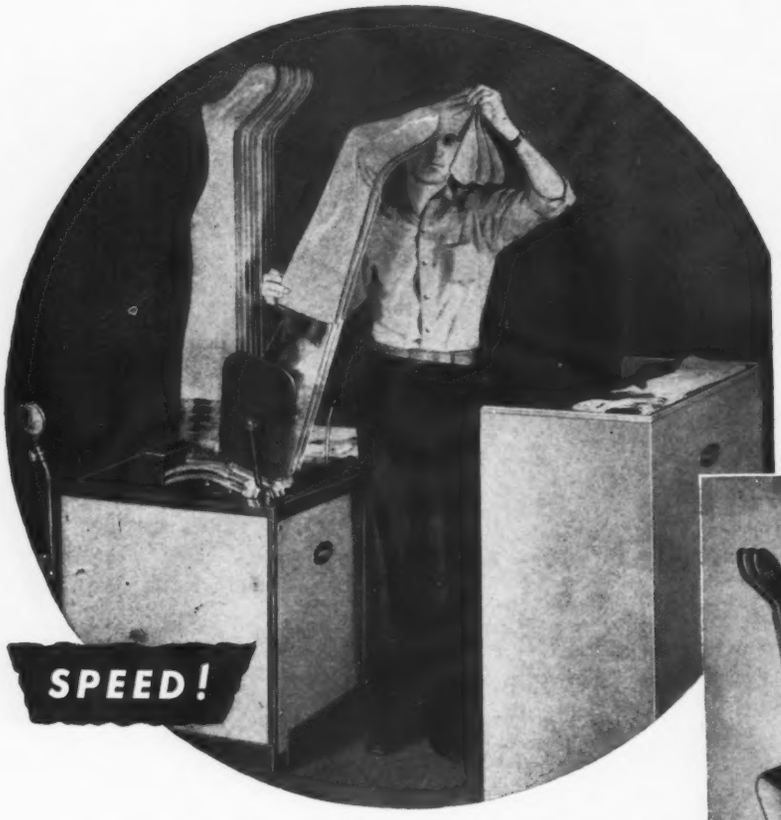
GANG CHANNEL

CAP

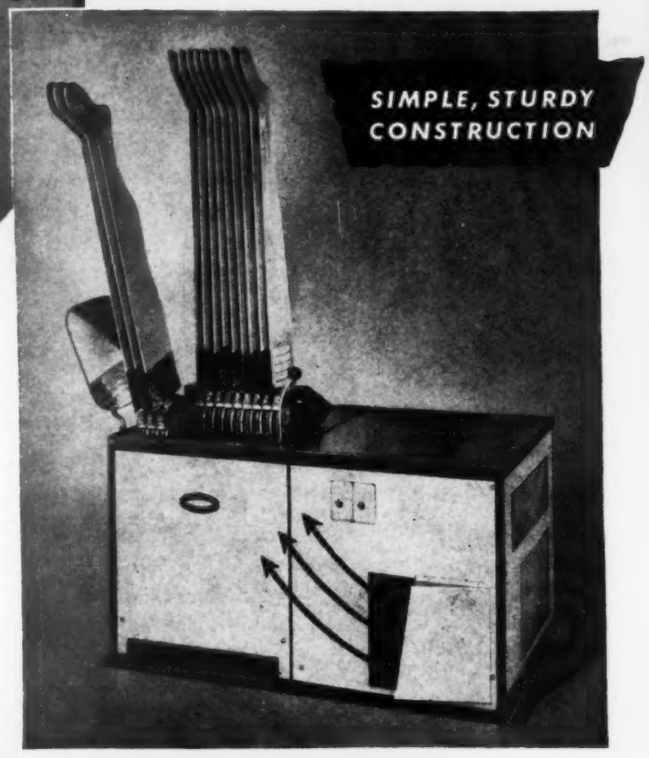
PRODUCTS OF: ELASTIC STOP NUT CORPORATION OF AMERICA

PARAMOUNT'S *Hi-Speed* MACHINE
for FASTER Finishing of Women's Hosiery

A complete operating unit as modern as the hosiery it finishes!
This fast-action machine offers speed of operation to meet that of the individual.



- No waiting for mechanical action
- Individual steam pressure and heat control
- Easy to operate . . . note tilted position of forms
- 3-at-a-time stripping speeds production
- Close alignment of forms aids drying
- Stainless Steel Forms eliminate fabric flaws
- Efficient All-in-One Hosiery Cabinet includes Piling Shelf and Wet Goods Trough



NEW! *Air-Cooled!*

Cool air directed upward through a vent adds to the operator's comfort and facilitates hosiery drying. This increased air circulation aids in lowering the room temperature — contributes materially to the efficiency and comfort of the operator.

Write for further particulars

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FACTORY—KANKAKEE, ILLINOIS • CABLE ADDRESS PARFORM

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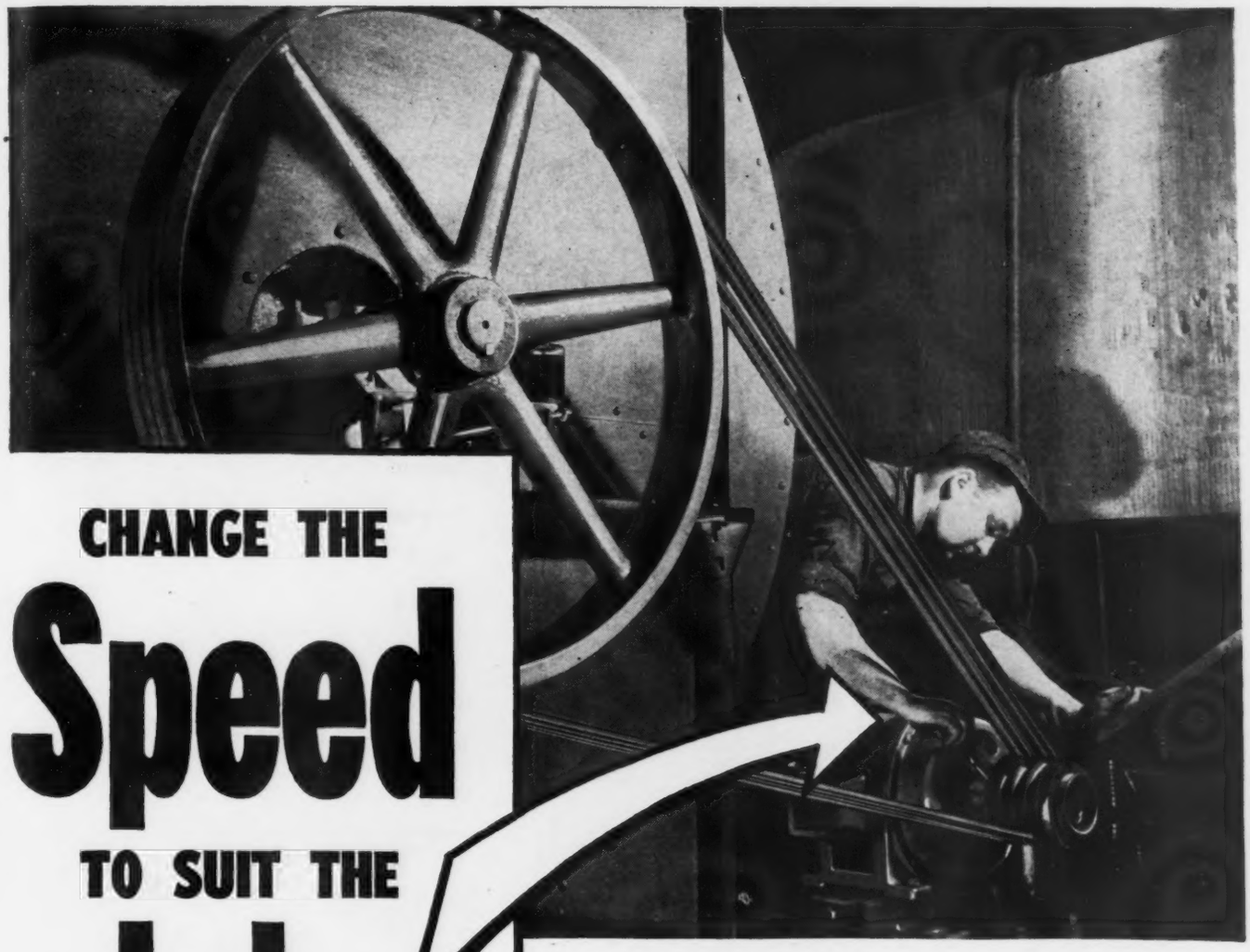

CHANGE THE Speed TO SUIT THE Job..

Texrope Vari-Pitch sheave makes it possible to vary the speed of this ventilating blower up to 25% to meet seasonal changes. Speed adjustment is quickly and easily made. A2102

Economical...TEXROPE Variable Speed Drives!

Whenever variations in speed will add to efficiency, production or economy — use TEXROPE Variable speed drives with standard constant speed motors. A Vari-Pitch sheave may provide all the speed range needed. They're available for stationary or motion control. Wide-Range Vari-Pitch sheaves and V-Belts provide greater range up to 116% — Speed Changers up to 375%.

A Complete Line . . .

Sheaves, Speed Changers . . . V-Belts . . . Engineering Aid. Your nearest Allis-Chalmers office or dealer is headquarters for EVERY type of V-Belt Drive equipment. Save time by buying all your needs from one reliable source. Every item of equipment is designed and backed by Allis-Chalmers — originators of industry's Multiple V-Belt Drive. ALLIS-CHALMERS, MILWAUKEE 1, WISCONSIN.

"Magic-Grip" Sheaves are Faster ON . . . Faster OFF

Here's the sheave that requires no filing, reaming or hammering to mount — no wheel-puller or bulging muscles to demount. *It comes completely assembled.* Just slide it on the shaft and tighten three cap screws. That's all! Grips like a vise — no shear, wobble or backlash. No damage to shaft or motor bearings.

ALLIS-CHALMERS

One of the Big 3 in Electric Power Equipment — Biggest of All in Range of Industrial Products

TEXROPE V-BELT DRIVES

Better FIND OUT ... than LOSE OUT

Send for the H & D "Little Packaging Library" today! A storehouse of packaging, sales and merchandising ideas. Interesting, quick and easy to read. Write for any or all of these helpful packaging booklets.

FREE—LITTLE PACKAGING LIBRARY

A highly successful executive says, "There are a lot of things our company would like to do now but can't. But we haven't stopped thinking. We're busy *finding out* a lot of things now so we won't *lose out* later." Many important discoveries and some unique inventions in the corrugated packaging field have opened the way to new profit-making opportunities for your product. The "Little Packaging Library" describes and illustrates many packaging improvements, designs, uses and ideas . . . clearly and concisely. It is kept constantly up-to-date by printing revised editions as required. Profusely illustrated, the "Little Packaging Library" is easy to read. It is designed for busy executives to give the most "know-how" in the least time. Here's a "train-load" of packaging, sales and merchandising ideas, packaged down to "trailer-size." Send for any one of these booklets or the full set —today The Hinde & Dauch Paper Co., Executive Offices, 4612 Decatur St., Sandusky, O.

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Ignoring the sign

. . . won't lessen the danger!

You'd be guilty of reckless driving if you simply ignored a danger sign . . . and you'd be just as guilty of reckless operation if you ignored the obvious warning above.

Can you match your competitors' production? — his quality? — his costs? If not, now is the time to make your preparations to put yourself in a stronger competitive position.

Let us consider your Spinning Room for instance. Do you find that you are still spinning wool by out-moded methods, or are the machines you are using worn-out, battle-scarred, and obsolete? If your answer is "yes", it is time to check the benefits of the WHITIN Model E Wool Spinning Frame. Unsurpassed in performance, in quality, and quantity of production, it's easy to operate and easy to keep operating. An installation of these machines will keep you well abreast of any competition.

★ ★ ★ *Whitin* **MACHINE WORKS** ★

WHITINSVILLE • MASSACHUSETTS
CHARLOTTE, N. C. ATLANTA, GA.

H & B Casablancas

The SAME Tensor will usually handle from 16 to 60 Yarns

With the H & B Casablancas High-Draft Spinning System the same one-piece cradle is used for ALL counts of yarn, and the tensor is changed only in very special cases. Ordinarily the same tensor will handle yarns ranging from 16 to 60 because, while the fibres in the 16 yarn are in greater mass, they are shorter and the band retention is about the same as with the 60 yarn where there is less mass but longer fibres.

Using Tensor #6, as illustrated herewith, you would change to a #10 when coarse counts are spun with exceptionally long cotton — the retention by #6 would be excessive. And again, using #6, you would change to a #4 for counts exceptionally fine with a short staple cotton — the retention by #6 would be inadequate. When this change is necessary it can be made in seconds without removing belts or disturbing the cradle. The lug "A" keeps the tensor from slipping out in a sidewise direction while the belts hold it against the cradle.

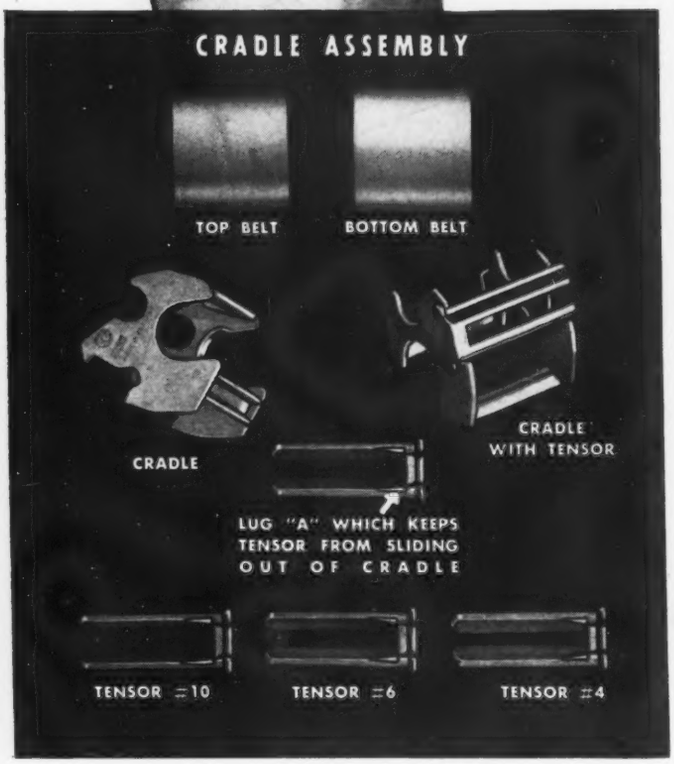
• • •

The "Quick-Change Cradle" is only one of several unique economy and quality features of the H & B Casablancas High-Draft Spinning System. Other features are as follows: —

AUTOMATIC WEIGHTING, which uses a spring in place of a weight, eliminating weights, weight wires, lever screws and adjustments. There is nothing on the roller beam and the latter is easily kept clean. This method minimizes variations in weighting from one set of rolls to another which are magnified with conventional weighting.

SINGLE-UNIT SADDLE AND STIRRUP, which can be quickly removed and replaced without disturbing the rest of the weighting assembly.

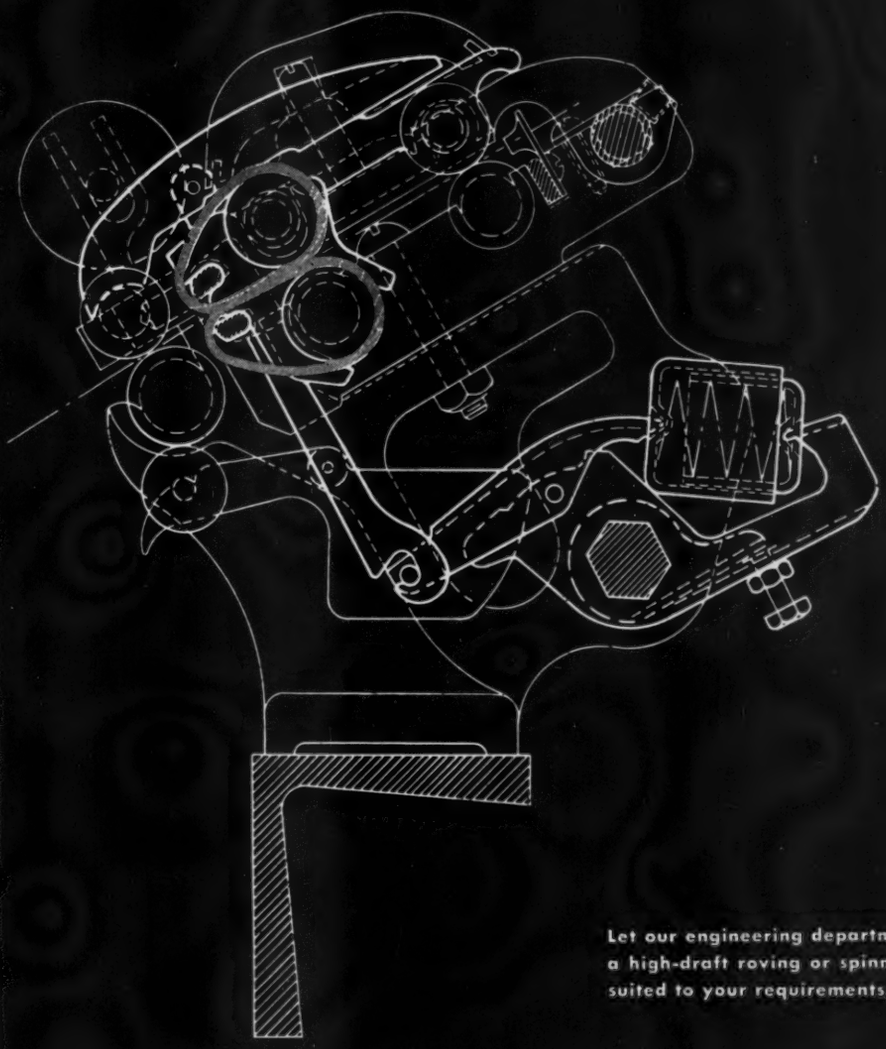
STREAMLINED SADDLE, which promotes cleanliness and controls oil distribution.



H & B AMERICAN

High-Draft Spinning

COMPLETE ASSEMBLY OF H & B CASABLANCAS HIGH-DRAFT SPINNING SYSTEM



Let our engineering department recommend a high-draft roving or spinning system best suited to your requirements.

MACHINE CO.

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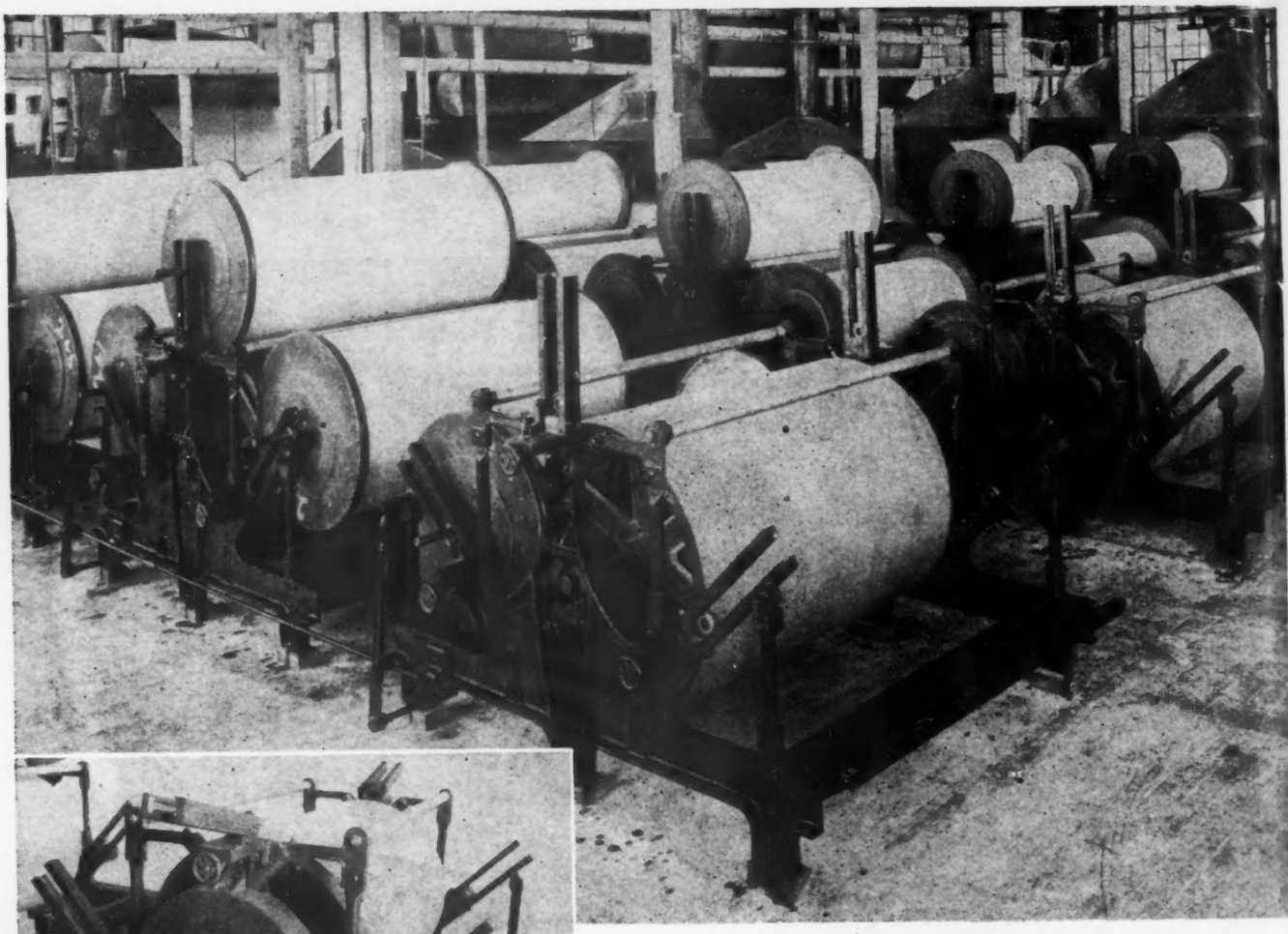
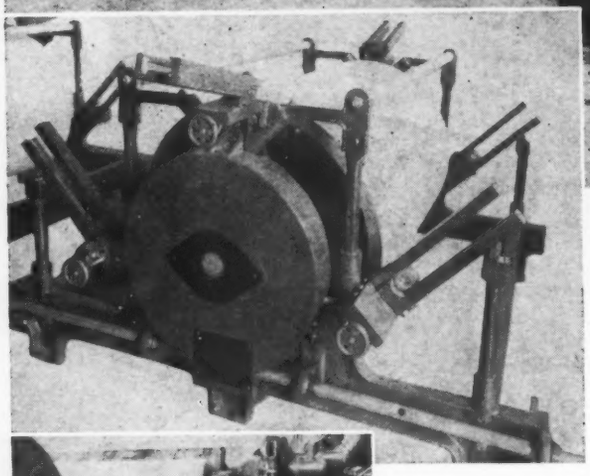
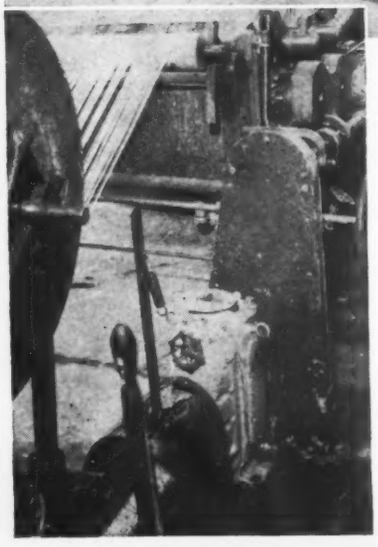






AN IMPROVED SLASHER CREEL

9 ways better!

The positive drive "White" Slasher Creel, proved the greatest slasher creel improvement in years, is designed to speed production, cut waste.

1. A positive variable speed drive synchronizes the driving cylinder surface speed with the size rolls.
2. Yarn is drawn from every beam at the same rate, delivered to the size vats, free of excessive tension, stretch or strain.
3. Stretch can be regulated as desired.
4. Starting and stopping of creel is smooth and without jerk—eliminating breakouts, kinks and loose ends.
5. Beams with the same amount of warp will all empty at the same time—reducing waste.
6. Creel operates satisfactorily at all speeds.
7. Each unit has one driving cylinder capable of handling 3 section beams. As many units as desired can be coupled together.
8. Ruggedly constructed for long life—ball bearings throughout.
9. Economical to operate—low power consumption and maintenance required.

WEST POINT FOUNDRY & MACHINE CO.

(Batson-Cook Company, Owners)

WEST POINT, GEORGIA

REDUCE *Eyebrowing* TO A MINIMUM

Whether you use flat clearers or revolving clearers, whether eyebrowing is a problem or not—there is a Dayco Roll Covering, specially engineered for your frames. It will increase your production, cut your costs, give you a more uniform yarn.

Try a few Dayco Roll Coverings. Make them show you how many dollars could be saved by using them as standard equipment. Write today for prices and complete information.

THE DAYTON RUBBER MANUFACTURING COMPANY
FACTORY: WAYNESVILLE, N. C.
MAIN SALES OFFICE: WOODSIDE BLDG., GREENVILLE, S. C.

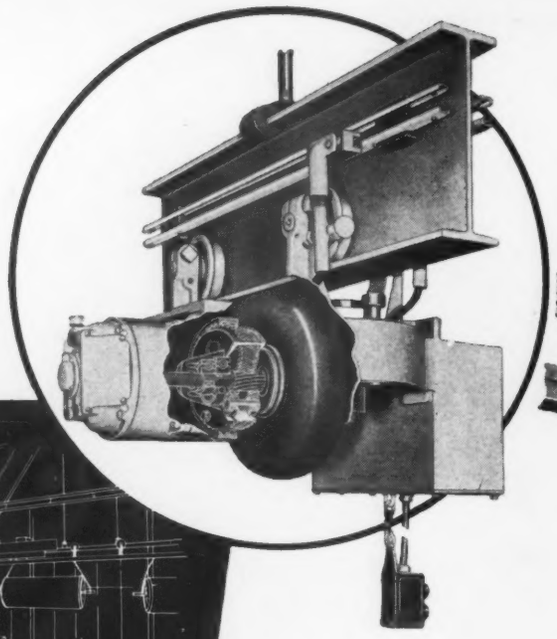
A FEW OF THE MANY FEATURES OF DAYCO ROLL COVERINGS

1. Large reduction of ends down.
2. More foreign elements removed from yarn.
3. Specially compounded for uniform wear, lengthening service life.
4. Equally effective for special types of synthetic and synthetic blends of yarn.
5. Decreases flying lint in spinning room.
6. Not affected by temperature changes.
7. Oil resisting and static free.
8. No grooving—less ends down.
9. Easy to apply.

Dayton Rubber

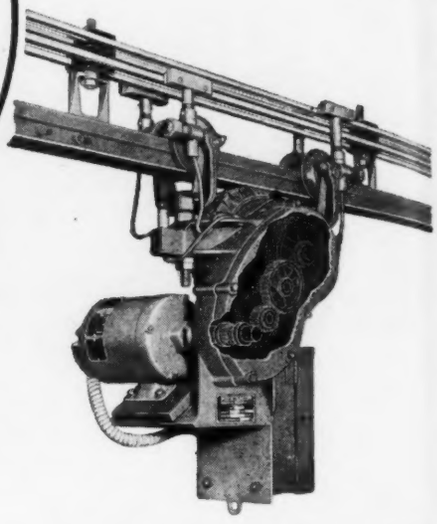
THE MARK OF TECHNICAL EXCELLENCE IN NATURAL AND SYNTHETIC RUBBER

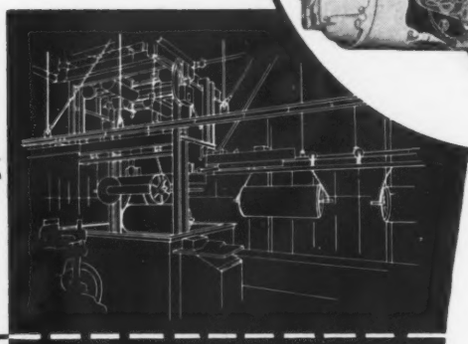
FAMOUS DAYCO SYNTHETIC RUBBER PRODUCTS SINCE 1934



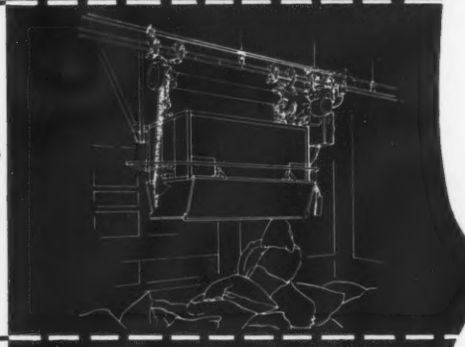
American Planetary Gear MonoTractor

American Spur Gear Mono-Tractor

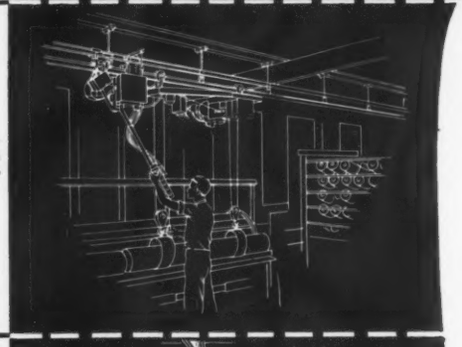




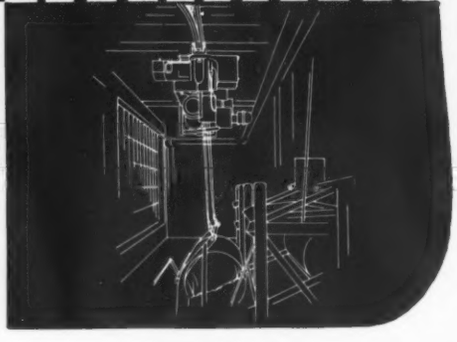
Vertical transfer between floors.



Delivery to fixed stations



Selective dispatch between multiple stations.



Loading and delivering to multiple stations.

Automatic Carriers

FOR OVERHEAD HANDLING

Through the application of simple electrical and mechanical devices, American MonöTractor Units perform automatic operations with extreme accuracy and reliability, saving costly handling labor and supervisory attention.

While unique in many features, such systems are built mainly from standard units. Mono-Tractors can be applied to carriers operating on any smooth bottom track. An American MonoRail Engineer is available for consultation in every important industrial area.

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A 56-page book showing successful applications of American MonoRail Systems.

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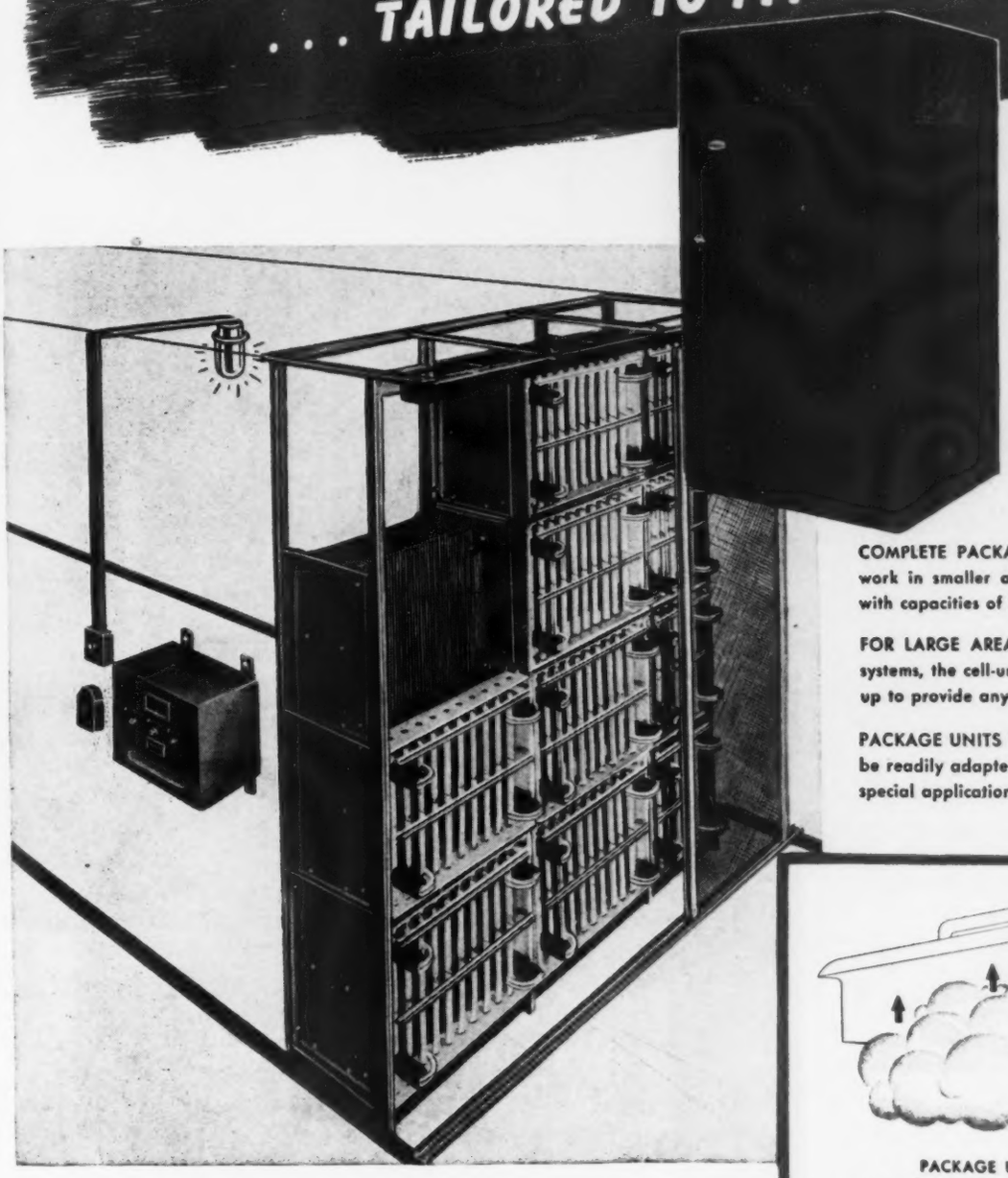
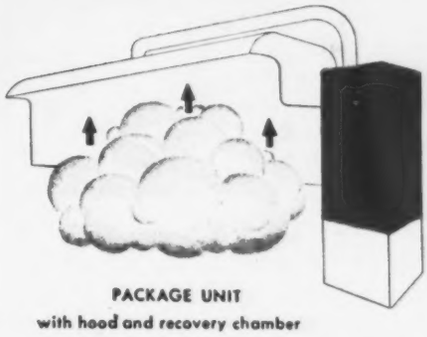
RAYTHEON ELECTRONIC AIR CLEANING . . . TAILORED TO FIT YOUR NEEDS



COMPLETE PACKAGE UNITS can be put right to work in smaller areas. Available in several sizes, with capacities of 200 to 2250 c.f.m.

FOR LARGE AREAS or installation in existing duct systems, the cell-unit type Precipitator can be built up to provide any required capacity.

PACKAGE UNITS WITH RECOVERY CHAMBER can be readily adapted for use with any type hood for special applications.



PACKAGE UNIT
with hood and recovery chamber

Before you invest in air cleaning equipment, consider the extra advantages offered by RAYTHEON.

Built in any capacity from 200 c.f.m. up, RAYTHEON Precipitators supply electronically-cleaned air for any area regardless of size. These new, high-efficiency units remove virtually all airborne dust, smoke, pollens, oil mist, etc. down to particles as fine as 1/250,000 of an inch.*

For spinning, twisting, weaving, drying and other rooms where clean air means clean fabrics, there's a RAYTHEON Precipitator of the exact size and type to fit your needs.

Write today for Bulletin DL-P-503 and 505

*According to Bureau of Standards discoloration tests, the Precipitator is more than four times as efficient as any mechanical filter.

RAYTHEON

Excellence in Electronics

RAYTHEON MANUFACTURING COMPANY

Industrial Electronics Division
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Builders of Raytherm Dielectric Heaters for every textile yarn and fabric application and other Electronic Products for Industry

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WHAT WE MAKE

Here's Your

Sturtevant
REG. U.S. PAT. OFF.
Puts Air to Work

B. F. STURTEVANT COMPANY · DIVISION OF
Westinghouse Electric

AIR-MOVING

The **SILENTVANE FAN** is one of the most versatile of all air-moving units—performing thousands of jobs in heating, ventilating, and mechanical-draft applications. Available in 19 sizes, this is just one of the many types of blower and exhaust fans listed.

AIR-CONDITIONING

HERMETICALLY-SEALED COMPRESSOR—heart of the air-conditioning system—is designed to save power and prevent refrigerant losses, with completely sealed-in construction and direct motor drive. No shaft seals, belts, pulleys or couplings.

The **SPEED HEATER**—a compact, efficient unit providing fast, economical heat—is typical of Sturtevant's complete line of space heaters for commercial and industrial applications. Whatever your needs, you'll find a Sturtevant unit for the job.

The **SURFACE DEHUMIDIFIER**—another vital component—maintains just the right amount of moisture for comfort or industrial air conditioning. These precision-engineered units are available in 47 standard sizes, to meet every conditioning requirement.

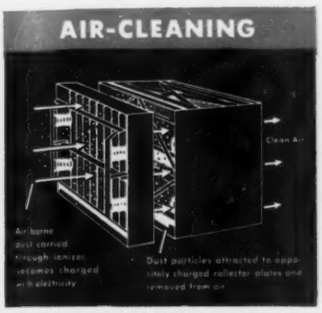
DESIGN 14 CENTRIFUGAL COMPRESSOR provides a dependable source of high-pressure air for pneumatic conveying, furnace blowing, and many other industrial applications. There is a Sturtevant centrifugal compressor to meet your every requirement.

WITHIN-THE-SPACE TYPE UNITAIRE is a compact, self-contained air-conditioning unit—complete with all components and ready for connection to water supply and electric power. Central Plant Type Unitaires also available.

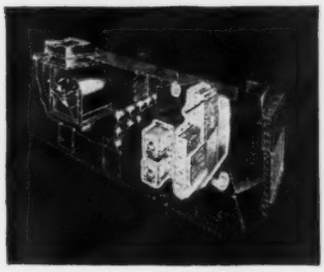
HEATING • VENTILATING • AIR CONDITIONING •

DRYING • DUST AND FUME CONTROL • CONVEYING

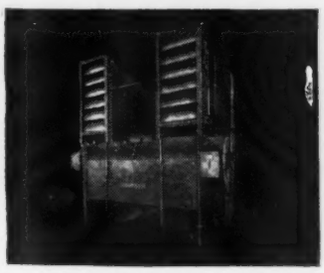
Complete Air-Guide for 1947!


AIR-CLEANING
Clean Air
Air-borne dust carried through ionizer becomes charged with electricity
Dust particles attracted to oppositely charged collector plates and removed from air

WESTINGHOUSE PRECIPITRON,* the electronic air cleaner. Here's how it works: as air passes through the unit, every particle of dust and dirt is first given an electrical charge, then attracted to oppositely-charged plates and removed from the air.



INSTALLED IN A CENTRAL PLANT air-conditioning system, the Precipitron provides a continuous supply of thoroughly-cleaned air, for distribution to all parts of a building. Collected dirt is removed by flushing the plates, manually or automatically.



INDUCED-DRAFT FLY-ASH COLLECTOR —for low-cost separation and collection of flue dust—shows the kind of equipment available for mechanical-draft air-cleaning applications. Separate cyclone and cellular-type dust collectors are also available.

**Trademark registered in U.S.A.*

The New Sturtevant-Westinghouse Catalog gives you up-to-the-minute answers on all three types of air-working equipment . . . all in one convenient, pocket-size volume

NEVER BEFORE have you been offered so *complete* a book as this! One that contains factual information on the *three* basic types of equipment—for air moving, air cleaning *and* air conditioning.

For when Sturtevant became a division of Westinghouse Electric, it was the first time that all three types of equipment were available from a single manufacturing source. And today, the complete line is included in this convenient, pocket-size volume—the 1947 edition of "What We Make," which is yours for the asking.

HELPS YOU DESIGN...SPECIFY...AND ORDER...FROM THE MOST COMPLETE LINE EVER AVAILABLE FROM A SINGLE MANUFACTURING SOURCE

The new catalog contains 211 pages of concise, condensed information—divided, for easy reference, into the following subjects:

82 Pages of Equipment. Listings, data, and description that will help you select the equipment best suited for any job.

37 Pages of Applications. Photos and facts that show how air is being used profitably in all branches of industry—and how it can work for you.

80 Pages of Engineering. Valuable, authoritative, air-engineering data, tables, formulas, and simplified charts that will help solve your design problems.

A request on your business letterhead brings your copy by return mail. B. F. Sturtevant Company, Division of Westinghouse Electric, Hyde Park, Boston 36, Mass., c/o Dept. T.

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Sturtevant
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Puts Air to Work

B. F. STURTEVANT COMPANY • DIVISION OF
Westinghouse ELECTRIC

PRECIPITRON
MECHANICAL DRAFT

Presenting...

ANOTHER IMPROVEMENT IN U S SHUTTLES FOR WOOLENS • WORSTEDS • BLENDS

Interchangeable die-cast brass eye permits five-minute changeover — reduces shuttle inventory

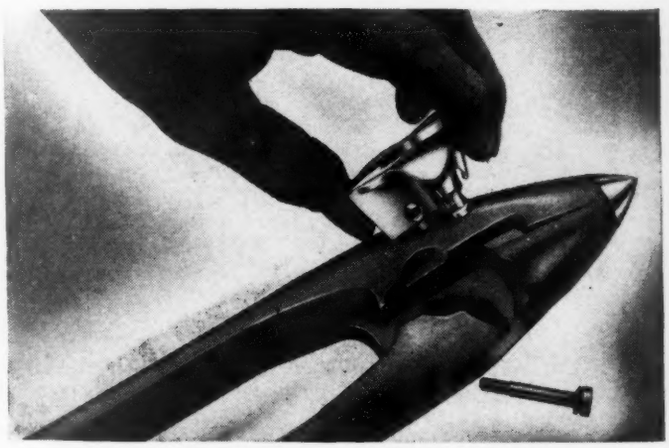
This improved U S Shuttle can be quickly adapted for weaving woolen, worsted, or blends by simply changing the shuttle eye – a five minute job that requires no special skill. The same standard shuttle can be equipped with a plain eye for woolens, Jackson Tension eye for worsteds, or a reverse eye for lefthand twist. Accurately dimensioned, each eye seats to a true fit without fussy adjustments. The same eyes can be used in any length shuttle.

This advanced feature lowers weave room costs by permitting full production with a limited number of shuttles. It also simplifies and speeds up normal maintenance.

Mill-tested under the most severe conditions, this new shuttle will materially increase the efficiency of your weaving operations – yet it costs no more. Be sure to see it before you place your next shuttle order. A U S representative will be glad to demonstrate its advantages.

AVAILABLE FOR PROMPT DELIVERY

DIE CAST BRASS EYE, formed to meet tolerances of .004 to .005 inch, permits complete interchangeability. Shuttle above is fitted for worsted or blend weaving, with eye equipped with Jackson Pad Tension Device.



IN LESS THAN 5 MINUTES, by removing one screw, lifting out worsted eye and inserting plain eye, shuttle is converted for weaving woolens.

U S BOBBIN & SHUTTLE CO.

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From basic raw materials, National Aniline alone makes every class of aniline dye and color . . . offers America's oldest and broadest color application experience.
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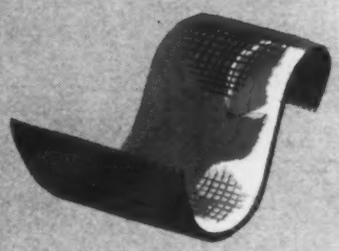
Tire cord solutioning is one of the many applications of Flintkote Syntex* aqueous dispersions of rubber.

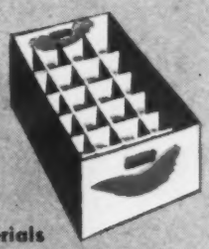
An outstanding use of Flintkote Hydrait* coatings is the protection of steel against corrosion.

Flintkote fluid rubber compounds are used for rugs and carpet backing and also as saturants, coatings, and bonding cements.



All types of insulation require the kind of protection from the elements that Flintkote insulation coatings provide.

Fibre board for containers is made water-resistant with Flintsize† added during manufacture.



Flintkote sound-deadening materials and industrial adhesives are important components of automobiles and many other consumer durable goods.

*TM Reg. U. S. Pat. Off.
†Trade-mark

A reservoir of supply for your needs. That's another way of describing Flintkote's complete research, development and manufacturing facilities. Let us help you. Write us today.

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Verney Corporation Anchors 340 Looms with Unisorb

WITHOUT FLOOR BOLTS OR LAG SCREWS

After a two-year test of Unisorb under a single loom, the Verney Corporation decided to anchor every newly installed loom in the same manner. Today Unisorb is anchoring 240 Draper XD looms in this company's Manchester, N. H., plant on asphalt-tiled cement floors, and 100 looms of the same type on maple flooring in its Brunswick, Me., plant.

The company reports that Unisorb has helped save the floors and minimize vibration — that it will continue to use Unisorb under all new looms.

Send for complete information on this modern, economical method for anchoring looms and other machinery without bolts or floor damage.

IT'S EASY TO IDENTIFY GENUINE **UNISORB**

LOOK FOR THE RED CENTER AND UNISORB BRAND MARK

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New AHCOFLEX Softeners

for 2 in 1 Performance

When you want an inexpensive penetrating softener for heavier, coarser cottons such as denims, ducks and coverts, specify Ahcoflex.

Ahcoflex gives 2-in-1 performance in thorough softening action, and re-wetting of fabrics which are to be Sanforized. Ahcoflex has been tested and proved in carefully selected full scale finishing processes. Now, Ahcoflex is available in quantity.

This new softener is easy to use, generally compatible with all ordinary finishing agents, and it will neither discolor fabrics nor cause them to become rancid during storage. Eliminate entirely the nuisance of two products and two operations on fabrics to be Sanforized. Use Ahcoflex for 2-in-1 economy and efficiency.

Write for test sample and further information, or send us a swatch of your coarse cottons for Ahcoflexing here.

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Every Department Benefits when Carding is Uniform

Reclothe your Cards with

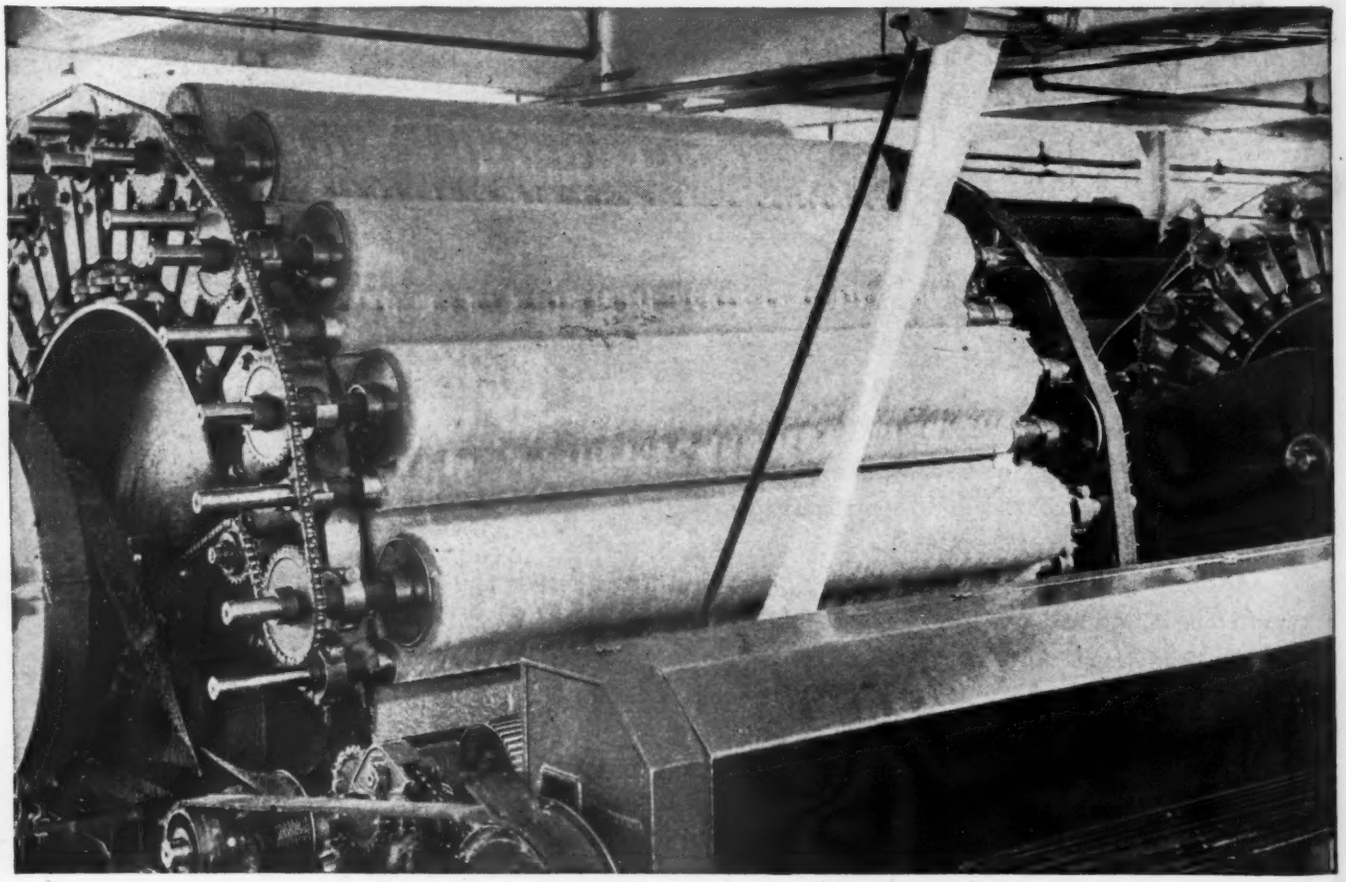
TUFFERIZED Card Clothing

TUFFER PRODUCTS

Card Clothing for Woolen, Worsted, Cotton, Asbestos and Silk Cards • Napper Clothing, Brush Clothing, Strickles, Emery Fillets. Top Flats Recovered and extra sets loaned at all Plants. Lickerins and Garnet Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant • Midgley Patented, and Howard's Special Hand Stripping Cards • Inserted Eye & Regular Wire Heddles

Expertly applied and properly operated Tufferized Card Clothing will produce the fine even web free from "nibs" so necessary for efficient spinning and weaving.

If you suspect that uneven carding is hampering your spinning room and weave room have a Howard representative inspect your card clothing. He will detect and report the cause and make suitable recommendations.



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Southern Plants: Atlanta, Ga., Gastonia, N. C. **Branch Offices:** Philadelphia, Pa., Blanco, Tex. **Canadian Agents:** Colwool Accessories, Ltd., Toronto 2

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There is no finer medium for beautiful overseaming, hemming, overedging and serging on a wide variety of fabrics, than the "Superlock."

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Drive shaft mounted on self-aligning ball bearings.

Cans have solid stainless steel shells.
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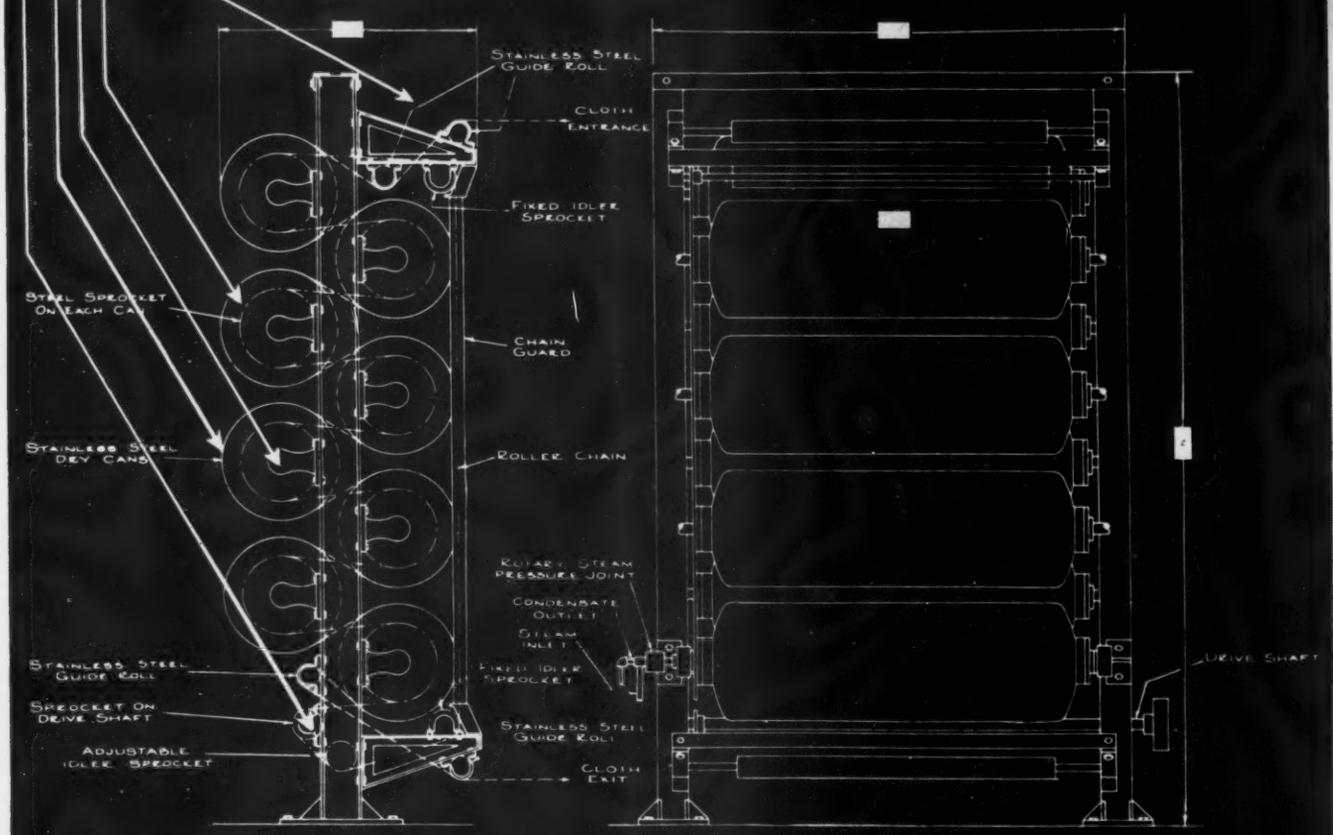
Cans are constructed to Par. U-69 of the A.S.M.E.
Unfired Pressure Vessel Code for 35 W.P.
Cans are acceptable for State Codes and Insurance.

Cans mounted on ball bearing self-aligning expansion and non-expansion journals.
Cans equipped with rotary pressure joints and syphons

Sprocket and roller chain transmission

Guide rolls are stainless steel
Guide rolls mounted on self-aligning ball-bearings



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SIX REASONS WHY HUNT SPREADERS MEAN GREATER PROFITS

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3. Reduces "seconds"
4. Stabilizes loom making faster speeds possible
5. Requires fewer adjustments by the fixer
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Hunt Spreaders Give You Top-Performance Stability!

In weave rooms throughout the industry, looms equipped with Hunt Spreader "backbones" are outperforming their non-equipped counterparts with speedier, smoother, more stable operation . . . . hour after hour . . . day after day.

Producing more cloth of better quality at lower cost comes naturally when you put "backbone" into rickety looms with patented Hunt Spreaders. Write for detailed information today.

"Bright Spot in the Production Picture," a comprehensive outline of the Hunt Spreader assembly, is yours for the asking. Write for your copy today.

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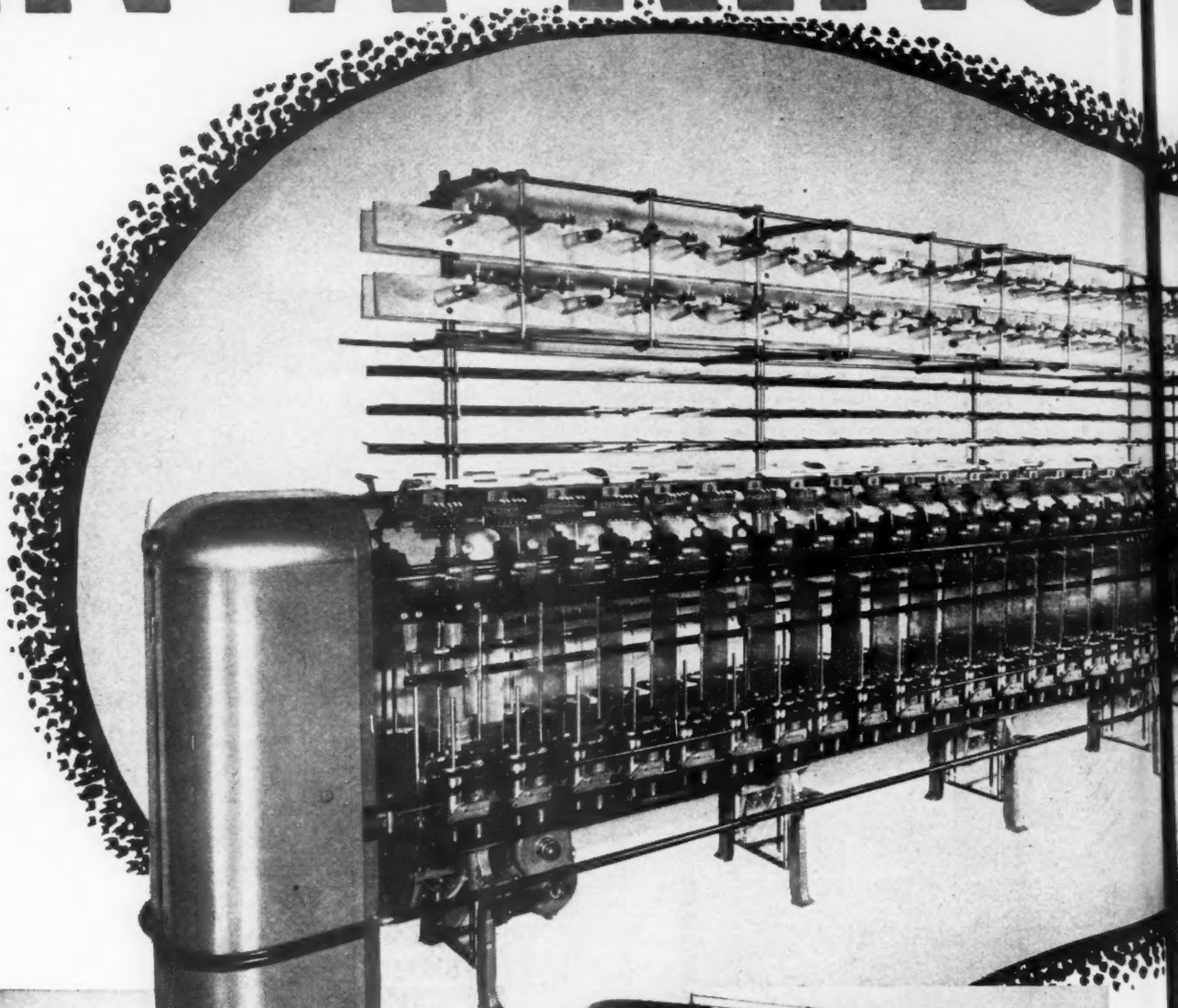
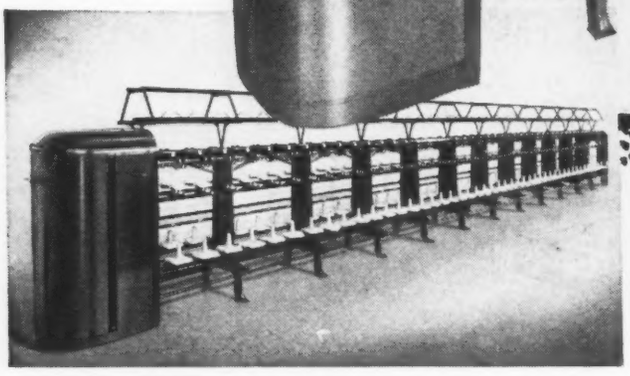
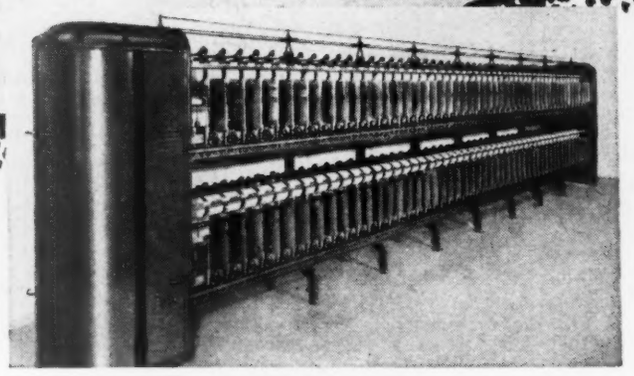
IN A RING

WHAT ARE THE ADVANTAGES OF...





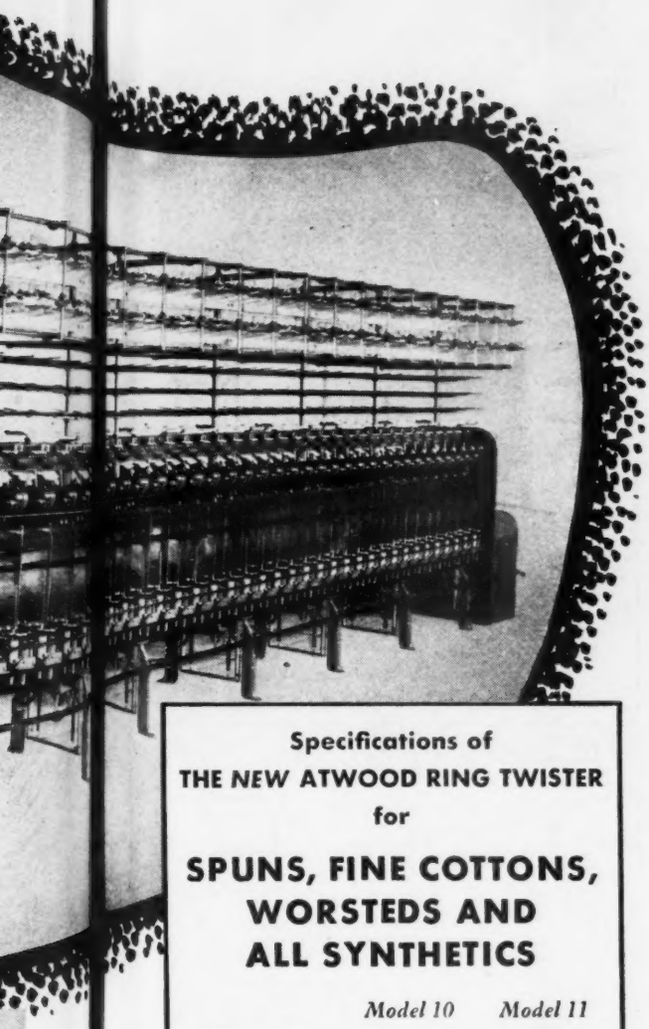
The Atwood Model 200 Redraw is built to suit your individual requirements. Spacing, creeling, tensioning—any or all operating factors are made to fit the job. With its variable-speed main drive, rate of production may be changed, in a matter of seconds, from 150 to 350 yards per minute.



The Atwood Model 110 Up-Twister is extensively used for twisting, knitting, weaving and thread yarns, with a wide range of twist and package sizes, at maximum spindle speeds. It has many improved design features that promote higher production of higher quality yarns at lower overall costs.

G TWISTER

OF... SINGLE, ENDLESS BELT DRIVE?



Specifications of
THE NEW ATWOOD RING TWISTER
for

SPUNS, FINE COTTONS, WORSTEDS AND ALL SYNTHETICS

	Model 10	*Model 11*
Diameter Ring	Up to 4½"	Up to 5½"
Traverse	Up to 8"	Up to 9"
Overall Width	26"	32"
HP Motor	5	7½
No. of Ends Combined	2 to 12	2 to 12

A number of years ago Atwood pioneered the single, endless belt drive for ring twisters. Since then, the advantages of such a drive have been conclusively established in doubling and twisting of all types of yarns—silk, rayon, spun rayon, nylon, wool, worsted, cotton, and combination. Single belt drive makes possible:

1. Spindle speeds that are constant throughout the entire length of the machine.
2. A STOP MOTION that permits the tying of knots in single ends of yarn, eliminates yarn with a ply missing, eliminates roller laps, reduces dirty yarn and waste to a minimum, and increases production.

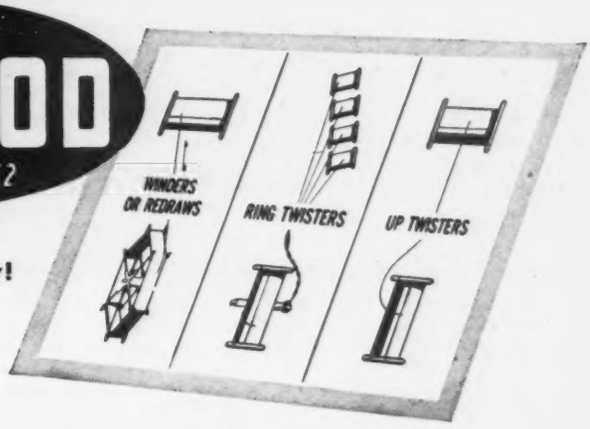
In addition to the single belt drive and the stop motion, which are standard equipment on the *New* Atwood Ring Twister, you will find: A lifter motion that operates in a vertical line, giving a smooth, uniform movement of the ring rail; spindles designed for high speeds; large diameter feed rolls that help in producing low-twist yarns; full-length spindle separators; compact design, and minimum power requirements.

Write for complete details of this thoroughly modern machine. Also ask for bulletins describing Atwood Up-Twisters and Redraws. AD-9

ATWOOD DIVISION
FARREL-BIRMINGHAM COMPANY, INC.
STONINGTON, CONN.

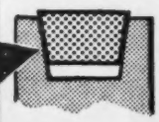
ATWOOD
SINCE 1852

What's new in yarn machinery!



It's the SIDE OF A V-BELT that DOES the WORK! and GETS the WEAR!

V-Belt In Sheave



Clearly, it's the sides of a V-Belt that do all the gripping on the pulley and get all the wear against the sheave-groove wall. That's why longer life for the sides means longer life for the belt!

That's Why the CONCAVE SIDE is IMPORTANT!

(A GATES PATENT)

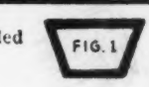
Look at any V-Belt in its sheave groove and you *see at once* that the sidewall is the part that gets the wear!

The *sidewall* is what grips the pulley. The sidewall picks up the power from the driver pulley, transmits that power to the tension member, then grips the driven pulley and transmits the power to it!

That explains why you have always noticed that the sidewall of the *ordinary* V-Belt is the part that wears out first. Clearly, anything that lengthens the life of the sidewall will lengthen the life of the belt.

The simple diagrams on the right show exactly why the ordinary, *straight-sided* V- Belt gets excessive wear along the *middle of the sides*. They show also why the Patented Concave Side *greatly reduces* sidewall wear in Gates Vulco Ropes. That is the simple reason why your Gates Vulco Ropes are giving you so much longer service than any straight-sided V-Belts can possibly give.

Straight Sided V-Belt



How Straight Sided V-Belt Bulges When Bending Around Its Pulley

You can actually feel the bulging of a straight-sided V-Belt by holding the sides between your finger and thumb and then bending the belt. Naturally, this bulging produces excessive wear along the middle of the sidewall as indicated by arrows.

Gates V-Belt with Patented Concave Sidewall

Showing How Concave Side of Gates V-Belt Straightens to Make Perfect Fit in Sheave Groove When Belt Is Bending Over Pulley

No Bulging against the sides of the sheave groove means that sidewall wear is evenly distributed over the full width of the sidewall—and that means much longer life for the belt!

MORE Important NOW Than Ever Before!

Now that Gates Specialized Research has resulted in V-Belts having much stronger tension members—tension members of Rayon Cords and Flexible Steel Cables, among others—the sidewall of the belt is often called upon to transmit to the pulley much heavier loads. Naturally, with heavier loading on the sidewall the life-prolonging Concave Side is more important today than ever before!

4611

Gates

THE MARK OF SPECIALIZED RESEARCH

THE GATES RUBBER CO., Denver, U. S. A.

World's Largest Makers of V-Belts

GATES VULCO ROPE DRIVES

Engineering Offices and Jobber Stocks **IN ALL INDUSTRIAL CENTERS** of the U. S. and 71 Foreign Countries

BACK ON THE JOB!

It's satisfying to be manufacturing once again for our regular trade in the Textile field. We've new ideas about machine design—many already are incorporated in our complete line of equipment. For instance: the tensionless jig, the tuber and others now in production. And we've an entirely new heavy-duty tenter for those who want the last word in capacity and modern construction. Whether your needs are for one machine or a complete plant installation, we will be happy to discuss them with you.

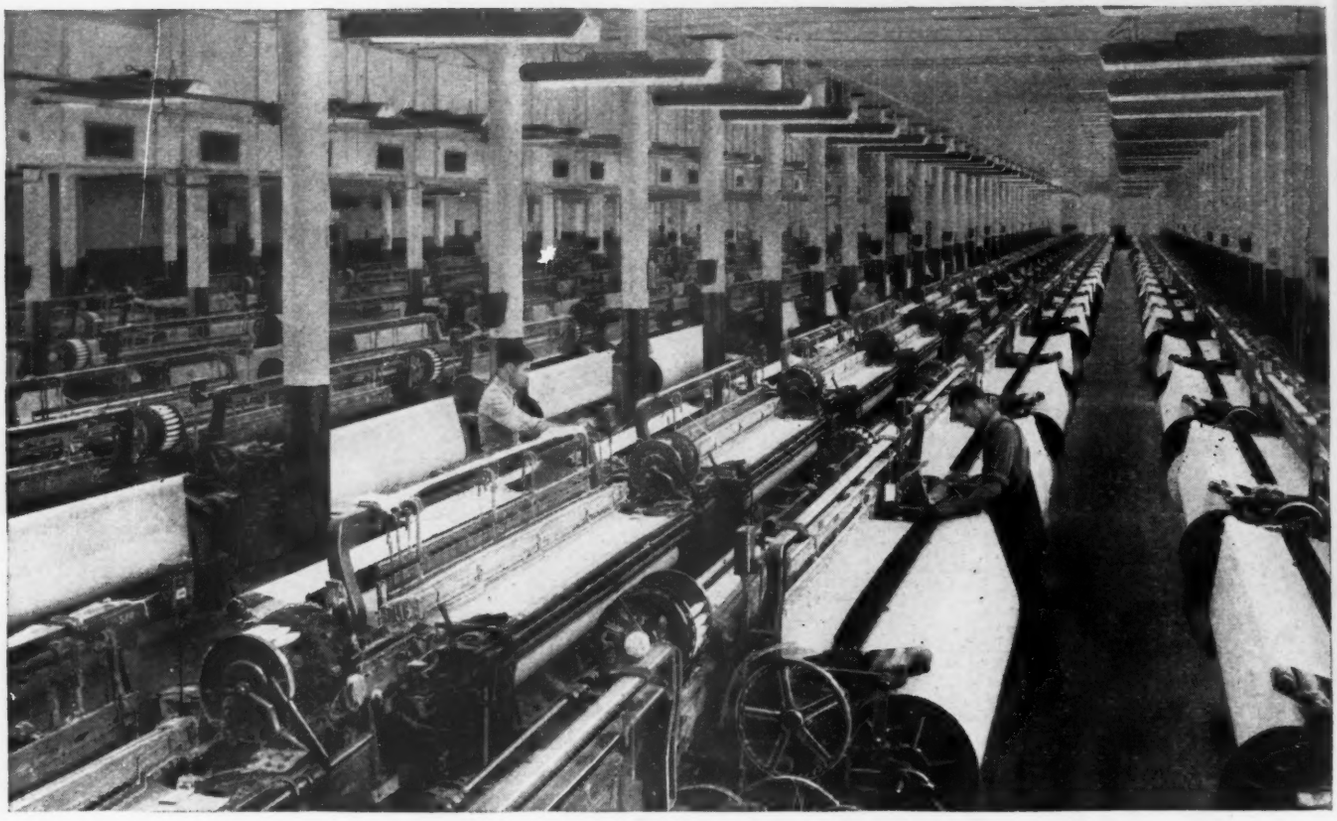
VAN VLAANDEREN MACHINE COMPANY

370 Straight Street, Paterson, 3, New Jersey **Cable address, VLAANDEREN, PATERSON, N. J., U. S. A.**

World's largest manufacturer of machinery for processing modern fabrics

IMPROVEMENTS IN SLASHING

PAY OFF IN THE WEAVE ROOM



USE SLASHER CONTROLS

BY BARBER-COLMAN

For details on the principles, features, advantages, and the benefits to be gained from Barber-Colman Moisture Content Control equipment, send for this brochure. Ask for Bulletin F-1705-1.

When loom beams come from the slashers uniformly sized, with proper and uniform moisture content, weave room efficiency can be increased. Barber-Colman now offers a complete system of electrically-operated automatic controls for the slasher room — governing moisture content of the warp, size box level and temperature, size cooking cycle, storage kettle temperature, and slasher cylinder temperature. The purchase of this equipment need not be based on guesswork. An experienced Barber-Colman field engineer will be glad to prepare a complete engineering survey which will point out how these automatic controls can improve your slasher room operations.

FOR GOOD AUTOMATIC CONTROLS — LOOK TO BARBER-COLMAN

Barber-Colman Company

45 YEARS EXPERIENCE SERVING TEXTILE MILLS

ROCKFORD ILLINOIS | BOSTON MASSACHUSETTS | GREENVILLE SOUTH CAROLINA | GREENSBORO NORTH CAROLINA | ATLANTA GEORGIA

For *pointers* on Heat-Treating Stainless

consult EASTERN!

Softening 18-8? How long should 10-gage E-S 18-8 (Type 302) sheet be held at heat to soften it between deep-draws? Can it be heated in a salt bath?

Oil-Quenching? Will oil-quenching make E-S 18-12 Mo stainless (Type 316 plate pick up carbon and lose corrosion-resistance?

25-20 Hardenable? To what Brinell can we harden E-S 25-20 chrome-nickel steel (Type 310) blades by heat-treatment? Can they be case-hardened?

Stress-Relieving? What heat-treatment do you recommend for stress-relieving titanium-stabilized stainless (Type 321) sheet after welding?

Burn Off Oils? Will the soluble oils used in drilling E-S 18-8 (Type 304) plate burn off without affecting it when the plate is heated to anneal the hard spots?

Minimizing Scale? How can we reduce scale formation when annealing light E-S 17-7 stainless (Type 301) sheet? We now hold it at 2,000° F. for 15 minutes

When questions like these come up in heat-treating stainless sheet or plate, take advantage of Eastern Stainless technical service. Stainless isn't temperamental, but procedures must be correct for it to give its best service. Send us your question—no matter how simple or complex—and you'll soon find that Eastern has the right answers where stainless steel is involved. And you can get those answers fast—by phone, telegram, or return mail, as you wish.

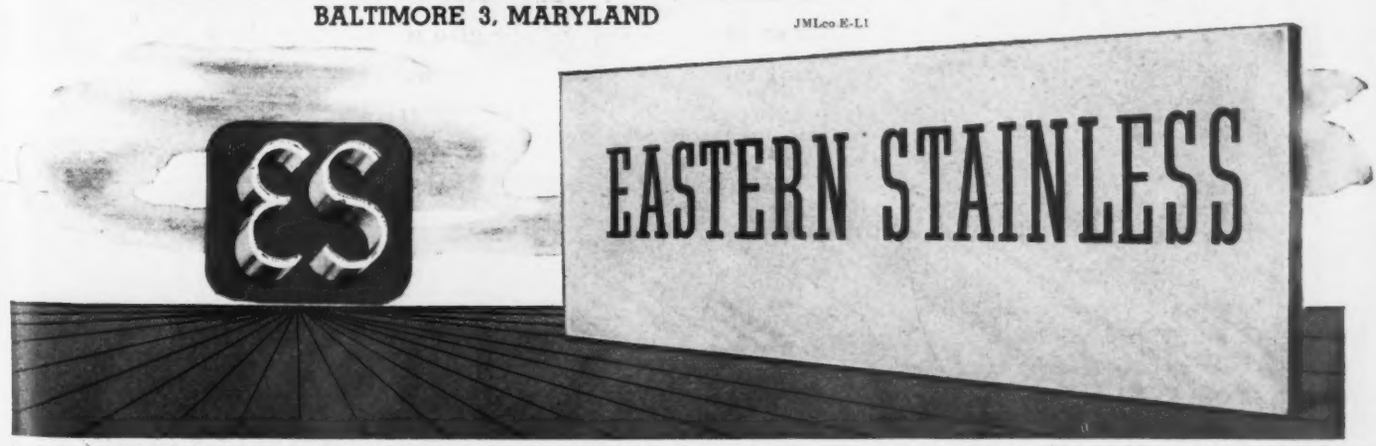
Many of the answers are already at your fingertips when you have a copy of our catalog, "Eastern Stainless Steel Sheets." Write for one today.

Ask Eastern for the Answer when Stainless is the Question

EASTERN STAINLESS STEEL CORPORATION

BALTIMORE 3, MARYLAND

JMLco E-L1



VISIT EASTERN STAINLESS STEEL CORPORATION AT BOOTH No. B-185, NATIONAL METAL CONGRESS, ATLANTIC CITY

Jim Smith's Son

COST JIM'S EMPLOYER

$4,109.16

Jim Smith's son was born last week. He cost Jim's employer over $4,000.

Jim has had pretty heavy expenses lately. His little girl was taken to the hospital three months ago for an emergency operation. Now, the baby. Jim has worried a lot about the doctor and hospital bills.

Yesterday he had an accident, because his mind wasn't on his work.

Workmen's compensation insurance will pay Jim's doctor and hospital bills. It will pay his weekly compensation benefits. But it will not pay him for his suffering. Nor will it pay for the damage to the machine or the material spoiled. That will cost his employer $4,109.16—which does not include the lost time of dozens of other men who saw the accident and stopped to talk about it, and who will worry about it for days afterwards.

Employers Mutuals write:

Public Liability . . . Automobile . . . Plate Glass . . . Burglary . . . Workmen's Compensation . . . Fidelity Bonds . . . Group Health, Accident, Hospitalization . . . and other casualty insurance . . . Fire . . . Tornado . . . Extended Coverage . . . Inland Marine . . . and allied lines of insurance. All policies are nonassessable.

Branch offices in principal cities. Consult your telephone directory.

EMPLOYERS MUTUALS of WAUSAU

OFF THE JOB... this complete 24-hour protection provides peace of mind for your employees

To supplement your workmen's compensation insurance, Employers Mutuals of Wausau provide for complete 24-hour protection for employees and their families through Group Health, Accident, and Hospitalization insurance.

This plan can be tailored to your requirements. It can give varying degrees of protection to various types of workers, as desired. It assures you, and your employees, that they are protected—on the job or off the job, for 24 hours a day—it frees them from worry about medical, surgical, and hospital bills for themselves and for their dependents.

Peace of mind is the greatest single contribution you can make toward the efficiency of your employees. With it, they work better and produce more; the accident rate drops, and with it the cost of your other insurance.

Investigate this plan now. Call the nearest Employers Mutuals office, or write Insurance Information Bureau, Employers Mutuals of Wausau, Wausau, Wisconsin.

ON THE JOB... safety engineering cuts down accidents, saves manhours, reduces insurance costs

Workers naturally prefer pay checks to compensation checks. When you carry Employers Mutuals Workmen's Compensation, E-M Safety Engineering helps keep your employees on the job and out of the hospital.

This service cuts accident frequency rates substantially—with resulting savings in insurance costs. Savings often run from 20 to 40%—in many cases even more.

E-M safety engineers, experienced through years of contact in many plants, are able to eliminate many sources of danger you might not notice. They help you plan and organize a program to interest and instruct the workers in safety so that they will understand how taking time to be safe saves time. Coordinated with the safety engineering work, Employers Mutuals industrial nurses help set up a plant nursing service to guard the health of employees and render efficient first aid.

When there are accidents, claims are given prompt attention. If he needs it, the injured worker is treated in one of Employers Mutuals modern physiotherapy laboratories, which speeds his recovery and many times prevents permanent disability. Employers Mutuals often spend more for rehabilitation than compensation would cost.

E-M Engineering Service, by reducing accidents, reduces time lost by valuable employees. It benefits the worker who doesn't get hurt, as well as the employer whose insurance cost is lowered when accidents do *not* happen.

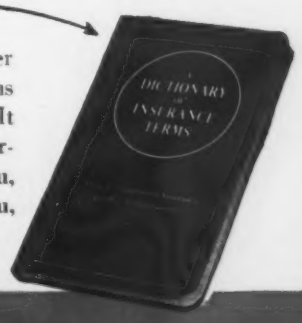
HOW Employers Mutuals of Wausau Make Insurance Understandable

Because of the serious loss that may arise from lack of understanding, Employers Mutuals endeavor to make insurance understandable, through:

- ... representatives trained to help the buyer understand his insurance;
- ... insurance survey service, which provides policyholders with an analysis of their insurance coverage—what they have, and what they need for full protection;
- ... an advertising program dedicated to giving *information* about insurance; and ...
- ... A Dictionary of Insurance Terms—How to Understand Insurance and Buy It Intelligently. Over 200 words and phrases defined in simple ABC English, with examples of specific applications.

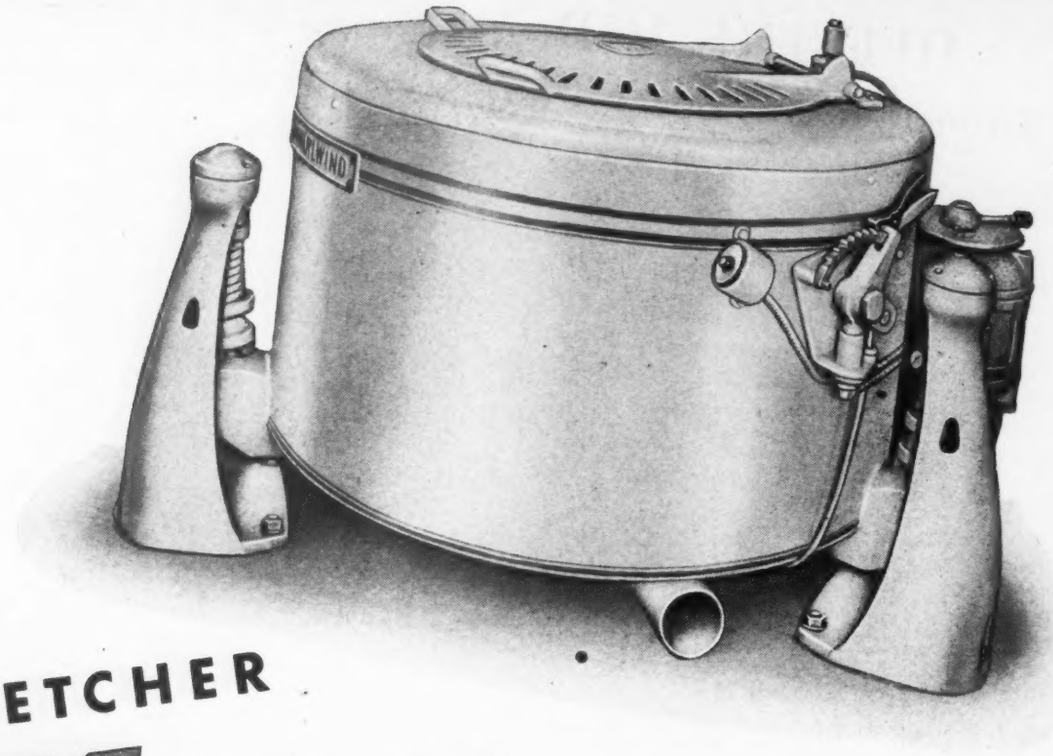
FREE

The BIGGEST little book on insurance ever published—A Dictionary of Insurance Terms—How to Understand Insurance and Buy It Intelligently? Write on your business letterhead to: Insurance Information Bureau, Employers Mutuals of Wausau, Wausau, Wisconsin.



. . make Insurance Understandable

EMPLOYERS MUTUAL LIABILITY INSURANCE COMPANY OF WISCONSIN
ESTABLISHED 1911
EMPLOYERS MUTUAL FIRE INSURANCE COMPANY
ESTABLISHED 1935
Home Office: WAUSAU, WISCONSIN



FLETCHER WHIRLWIND EXTRACTOR

SMOOTH...FAST...DEPENDABLE

Smooth, easy operation . . . kind to delicate fabrics . . . high-speed . . . self-balancing . . . rugged construction. These features typify Fletcher Whirlwind Extractors. They help to explain why Fletcher owners, all over the country, marvel at the way these precision-built machines stand the abuse of overtime hours and indifferent operators.

Automatic Finger Tip Control sets extractor to any length operating time. Hydraulic Brake stops it, quickly and smoothly, without jerking . . . prolongs brake life, assures more uniform wear, saves labor.

Consult Fletcher for fast, safe, economical extraction.

FLETCHER WORKS

223 GLENWOOD AVE. PHILADELPHIA 40, PA. ESTABLISHED - 1850

Saran BY NATIONAL

FOR TEXTILES WITH A PERSONALITY

In the weaving of smart, eye-catching fabrics, SARAN BY NATIONAL fulfills the desire for something new and better in modern textile applications.

SARAN has been woven into fabrics with a brilliant future, in a glorious symphony of colors, ranging from delicate pastels to rich vibrant hues. SARAN fabrics are both beautiful and durable. They resist abrasion—are not affected by dirt, grease, alcohol, alkalies and most acids . . . easily cleaned by merely wiping with a damp cloth.

Here are fabrics with a new personality—with new, increased consumer appeal for a host of modern products.

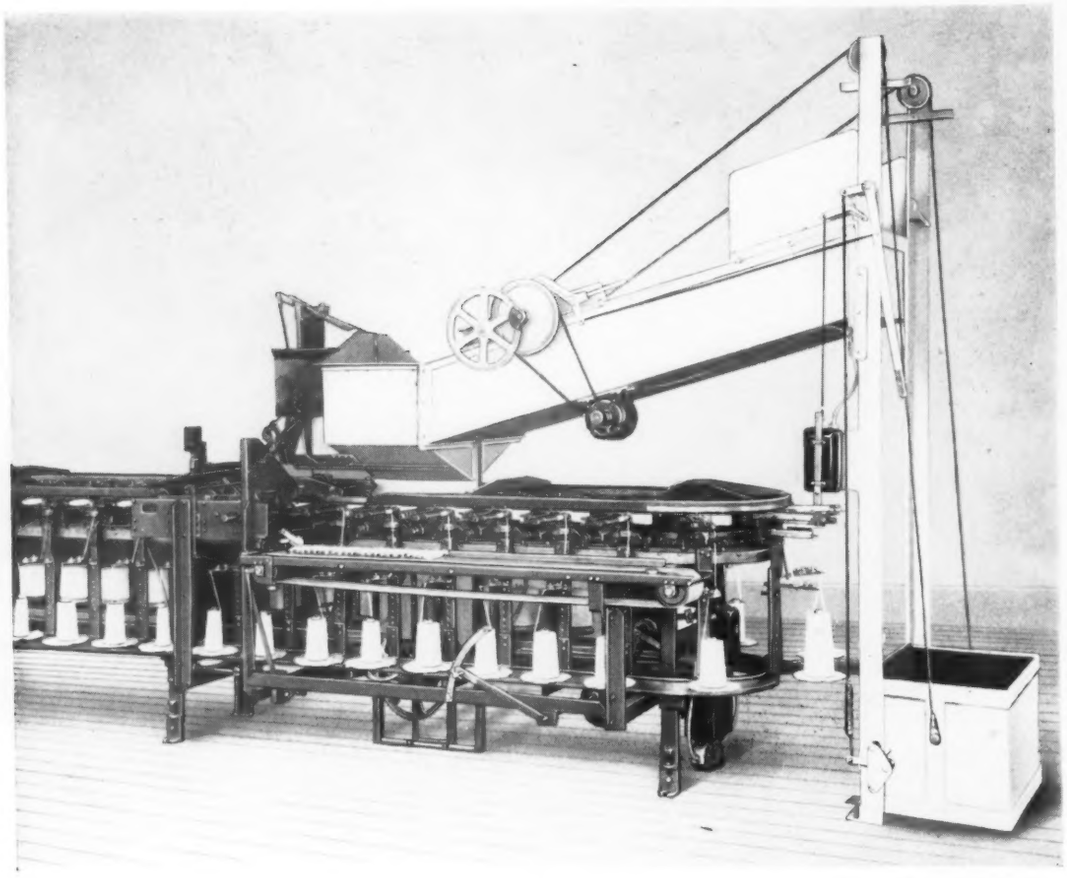
An illustrated booklet on SARAN BY NATIONAL is yours for the asking. Please write on your company letterhead.

The NATIONAL Plastic Products Company

ODENTON • MARYLAND

AUTOMATIC TRAVELING SPINDLE FILLING WINDER

FULL AUTOMATIC OPERATION



Our Standard Rayon Quiller has 100 spindles and takes the regular 7⅜", Draper head, bobbin wound about 1" in diameter and runs at a spindle speed of 5,000 R.P.M.

The wound bobbins are handled very gently and placed on a wide apron, side by side, where they can be examined and marked and then placed directly on pin boards.

The empty bobbin handling is wholly automatic, the bobbins being delivered to a box which rises and dumps itself and returns automatically, and there is a large reserve of about 4,000 bobbins in the hopper and chute.

The wind on the bobbins is of a new type, overlapping layers, so that an excellent weaving bobbin is obtained without over-tensioning.

ABBOTT MACHINE COMPANY

WILTON, N. H.

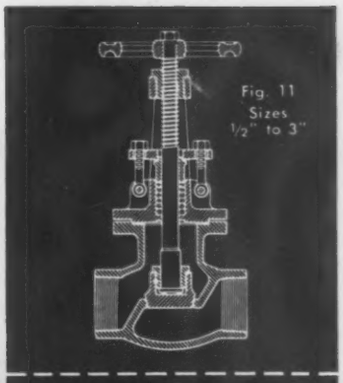
Southern Representative, Mr. L. S. Ligon, Greenville, S. C.

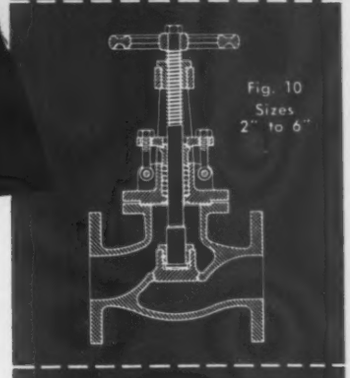
Now Available in standard types

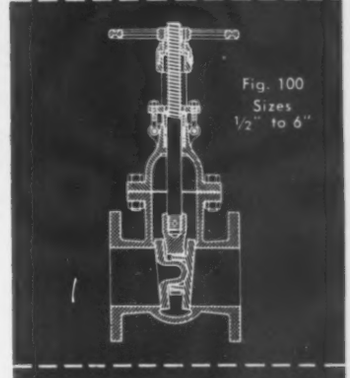
COOPER Certified Stainless Steel Valves and Fittings

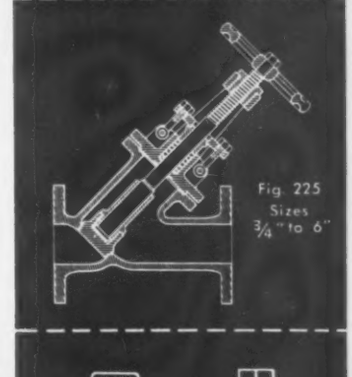
made of any wanted alloy to resist

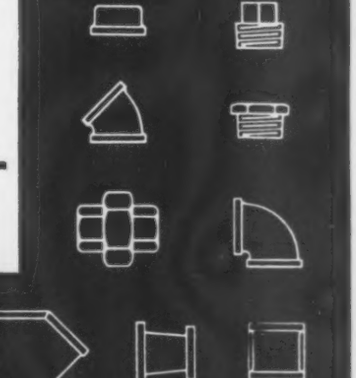
Corrosion · · · Heat · · · Abrasion · · ·











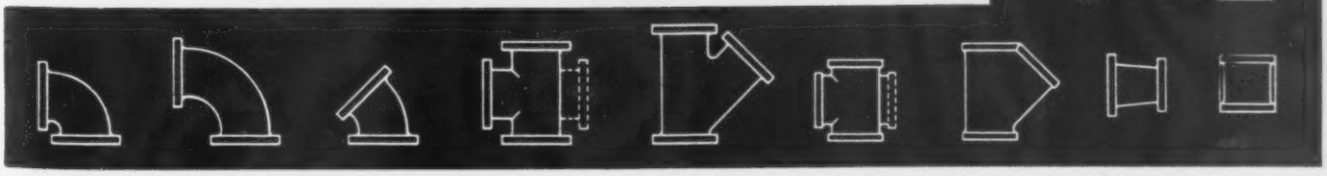
✻ Every Stainless Steel valve or fitting made by COOPER is backed by 25 Years of Stainless Steel "know-how". Each is "Certified" by COOPER to do its job and do it well . . . for in producing "Certified" valves COOPER registers the analysis of each heat and stamps each casting with its heat number for positive identification. When desired, a certificate of the analysis and heat number is issued the user. This certificate applies to all Stainless Steel parts which come in contact with the fluid being handled. Each valve or fitting rigidly meets the specifications of the job.

COOPER Valves and Fittings are sold through the largest Stainless Steel distributors in the country. Check with your local distributor.

The COOPER ALLOY FOUNDRY CO.

HILLSIDE, N. J.

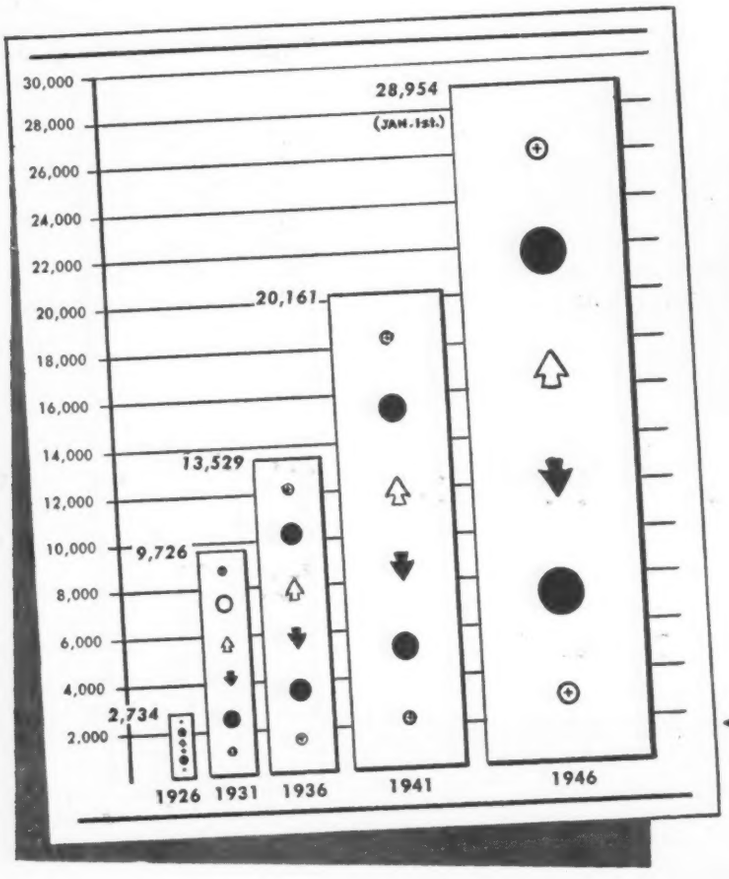
Specialists in Corrosion Resisting Stainless Steel
. . . For a Quarter of a Century . . .



Milestones in Service

Otis Maintenance for Otis Elevators

There are 245 Otis offices* but only one Otis Maintenance Service. • This service is a home town enterprise in operation, so that it may be adapted to the area it serves. It is a national enterprise in research, engineering and manufacturing so that each Otis elevator owner may have the best that concentration and quantity production can provide. • Perhaps the strongest indication of the merit of this service is its growth and development. For more than a quarter of a century, in good times and bad, Otis Maintenance has proved the wisdom of one policy, one system and national service for Otis Elevator owners. • Otis Maintenance provides complete care of Otis elevator equipment by the manufacturer. It is furnished at a flat monthly rate. Complete details are available through local Otis Elevator Company offices.



←Number of Elevators under Otis Maintenance. The steady increase in the number of elevators maintained for owners by Otis offers convincing proof of the economy and efficiency of *maintenance by the manufacturer.*

Otis offices in 245 cities have but one interest . . . to provide the best and safest elevator and escalator transportation possible.

Otis ELEVATOR COMPANY
OFFICES IN ALL PRINCIPAL CITIES

MANHATTAN'S
Condor WHIPCORD V-BELTS

In a team of Condor Whipcord V-Belts there are no laggards to kill the load pullers. The inelastic stretch left in a Condor V-Belt after manufacture is negligible. The stout Whipcords that comprise the Strength Members of a Condor V-Belt are "laid to stay" in their firm matrix of Flexlastics.

Flexing can be at high speeds and continuous on short centers without deterioration due to overheating. As the cross section shows, the Flexlastics surrounding the Whipcords afford an effective cushion against friction and are specially compounded to dissipate internal heat. Note the unusual flexibility of the Whipcord construction in the demonstration above.

This means better contact in the sheave grooves . . . steadier pulling with multiple belts of uniform quality.

Whether your drive is two belts or twenty, make sure you get all "pull" for your power costs by using CONDORS.

ACKNOWLEDGED ADVANTAGES

1. Wide margin of strength
2. Minimum inelastic stretch
3. Uniform flexibility
4. Maximum resistance to structural breakdown
5. Smooth running
6. Maximum traction
7. High resistance to side wear
8. Correct lateral reinforcement

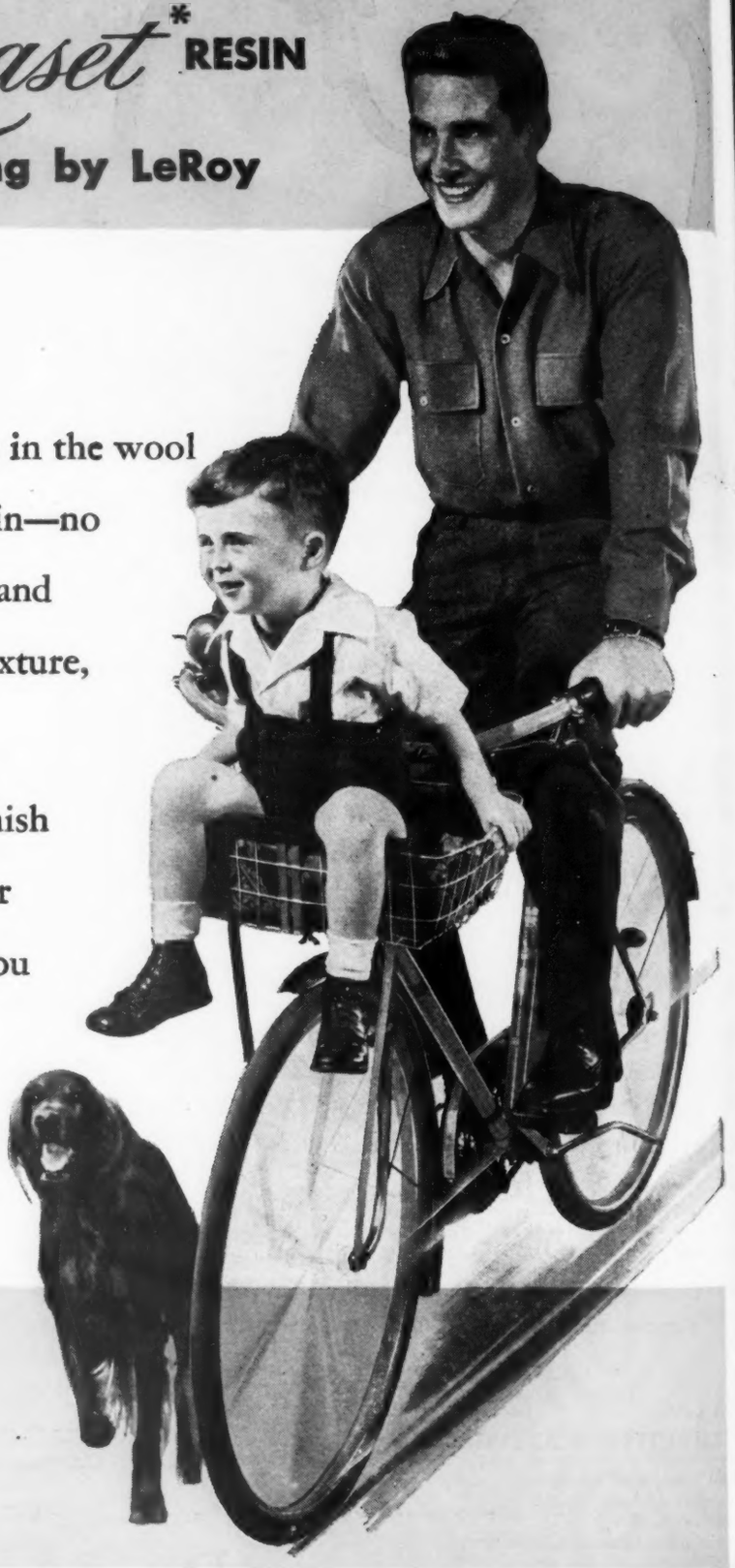
The term FLEXLASTICS is an exclusive MANHATTAN trade mark. Only MANHATTAN can make FLEXLASTICS.

RAYBESTOS-MANHATTAN, INC.
MANHATTAN RUBBER DIVISION
EXECUTIVE OFFICES AND FACTORIES PASSAIC, NEW JERSEY

ALL A MAN WANTS IN A SPORTS SHIRT...

SHRINKAGE CONTROL WITH *Lanaset** RESIN

PLUS Styling by LeRoy



Note the superior advantages in the wool shirt treated with LANASET* Resin—no excess shrinkage after repeated hand washings . . . assurance of soft texture, comfortable fit and long service.

Specify the LANASET Resin finish for *your* sportswear woolens. Our technical staff is ready to assist you in obtaining the best possible results.

Wool sports shirts by LeRoy Shirt Co. at Lord & Taylor in New York, Roos Bros. in San Francisco.

other melamine resins for textile finishes

SHEERSET* RESIN—

Combination of resins based on melamine which may be applied to cotton, rayon and acetate sheer woven fabrics, and mixtures as a wash resistant, crisp, resilient finish. Fabrics so treated will hold their shape with a minimum of distortion and maintain their hand under conditions of high humidity, heat and other adverse conditions to which apparel is subjected.

Sheerset* RESIN

LACET† RESIN—

Combination of resins based on a melamine type which may be applied to cotton or rayon Nottingham lace curtains as a durable stiffener. At the same time the finish controls stretching (sagging) and shrinking. Where unusual fastness to light is desired, pigments may be used to produce the desired effect. This finish contributes to soil resistance and eliminates the need of framing and ironing after laundering. When chlorine is used in the washing process, it is essential that the standard practice be observed and an antichlor used.

Lacet† RESIN

AEROTEX† SOFTENER H—

A durable synthetic type softener especially suited for use in conjunction with many of the synthetic type resins because of its compatibility. AEROTEX SOFTENER H produces a finish of superior smoothness and suppleness of handle, being equally efficient on wool and wool mixtures, cotton or synthetic fibers. It serves as a wetting agent and does not discolor nor interfere with crease-resistant properties. It may be applied at any stage during the wet processing of the goods.

aerotex† softener H

*Reg. U. S. Pat. Off.

†Trade-mark of American Cyanamid Company

AMERICAN CYANAMID COMPANY
TEXTILE RESIN DEPARTMENT
BOUND BROOK, NEW JERSEY

New York • Boston • Philadelphia • Providence • Charlotte • Chicago

LANASET RESIN • SHEERSET* RESIN • AEROTEX† SOFTENER H • LACET† RESIN*

A BASEBALL PLAYER is no better than his ARM

And A Card Is No Better Than Its CLOTHING

A weak arm never made a big league baseball player; nor did faulty card clothing nor the wrong type of clothing for the purpose ever make for good carding.

If you want good card clothing, there's none better than Ashworth; it's readily available from 7 distributing points. If you want the best type of clothing for the purpose, let an Ashworth representative help you select it.

The best way to KEEP your card clothing in good condition is to use Ashworth free surveys periodically. We recommend only necessary repairs and plan them so as to distribute the cost over a period and to involve minimum loss of productive time.

Further details on request.

ASHWORTH BROS., INC.
AMERICAN CARD CLOTHING CO.
(Woolen Div.)

Fall River*†‡ Worcester*‡ Philadelphia*†‡
Greenville†‡ Charlotte†‡ Atlanta†‡
Dallas‡ (Textile Supply Co.)

* Factory † Repair Shop ‡ Distributing Point

PRODUCTS AND SERVICES

Card Clothing for Cotton, Wool, Worsted, Silk Rayon and Asbestos Cards and for all types of Napping Machinery. Brusher Clothing and Card Clothing for Special Purposes. Lickerin Wire and Garnet Wire. Sole Distributors for Platt's Metallic Wire. Lickerins and Top Flats Reclothed.

Ashworth PIONEERS IN CARD CLOTHING

3 FACTORIES • • • 6 REPAIR SHOPS • • • 7 DISTRIBUTING POINTS

New Stainless Parts
MODERNIZE WEAVING EQUIPMENT

As new equipment and parts become more plentiful, many mill superintendents are checking on improvements that will give them lower production costs and better-quality textiles.

One of these is ARMCO Stainless Steel bars and wire, made by the Rustless Iron & Steel Division of the company. They are being widely used in new equipment and for replacement parts.

FOR SYNTHETIC YARNS

In looms, for example, stainless heddles, reeds, and thread guides are a decided step forward in manufacturing new synthetic yarns. There is no metallic reaction from chemical pretreatments of the yarns—little danger of rust collecting on the loom harness and causing stains and other damage to material.

Other money-saving uses for stainless bars and wire include spindles, valves, dye beck reels and guides, spool yarn racks, screens, cloth and yarn-handling baskets, as well as machined parts on cloth weaving and spinning equipment.

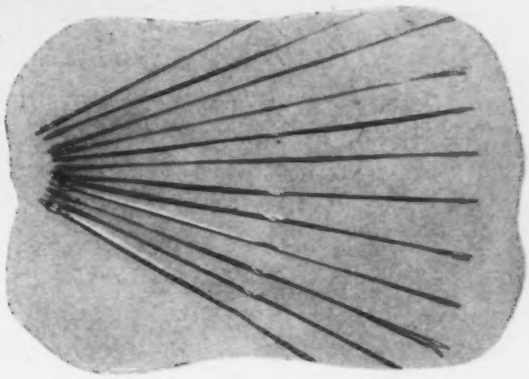
In your mill check-up, also remember the rustless qualities of ARMCO Stainless sheets in dye kettles and all other wet processing equipment. Stainless is smooth and easy to clean, eliminates boil-outs and color "carry-overs."

Write your equipment fabricator for full information about stainless. Or just address The American Rolling Mill Co., 4851 Curtis St., Middletown, O.

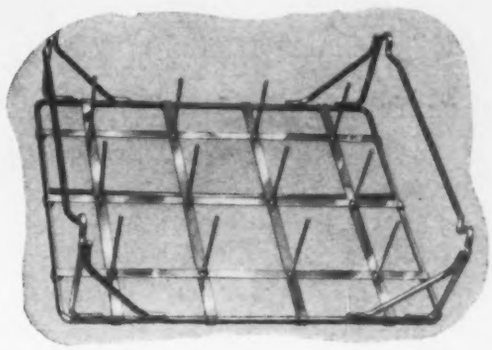
STAINLESS ARMCO STEEL

THE AMERICAN ROLLING MILL CO.

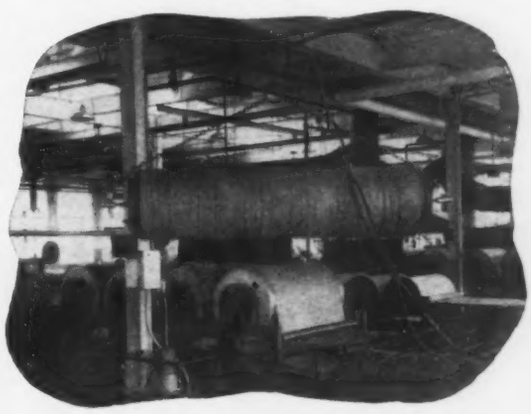
Special-Purpose Sheet Steels • Stainless Steel Sheets, Bars and Wire



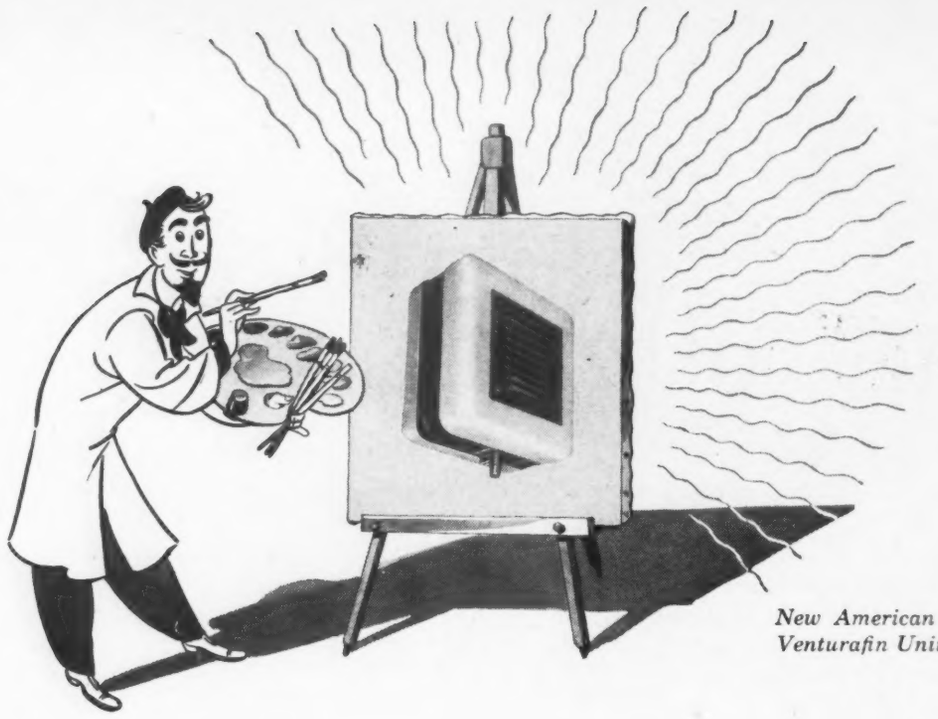
Yarns and delicate threads won't snag on the smooth surface of stainless steel heddles, guides.



Bobbin board made of stainless steel bars and wire. Pins are spot-welded to the simplified framework to insure a sturdy, light-weight board.



ARMCO Stainless Steel sheets were used for this 9-cylinder slasher and size box. This smooth rustless steel will not snag or stain fabrics.



New American Blower Venturafin Unit Heater

We dolled up Industrial Unit Heaters!

For many years, industrial heating was both a "headache" and an "eyesore."

American Blower engineers cured the "headache" before the war by greatly increasing the range and efficiency of Unit Heaters, and eliminating needless noise in operation.

Now, we have greatly improved the appearance of industrial unit heaters—made them fit the architecture and environment of the most modern offices, factories, stores, garages, etc.

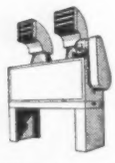
Phone your nearest American Blower Branch for information about the new, improved Unit Heaters for wall, floor or ceiling mounting. Ask also about any other air handling equipment you may require, and about Gyrol Fluid Drive for the smooth transmission of power or stepless variable speed control.

AMERICAN BLOWER

AMERICAN BLOWER CORP., DETROIT 32, MICH.

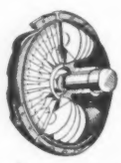
Division of American Radiator & Standard Sanitary Corporation

4 Years of War-Stimulated Improvement—On Top of 61 Years of Engineering Development

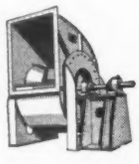


Heating Equipment

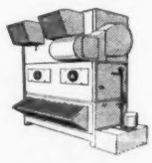
Ventilating Equipment



Gyrol Fluid Drive



Industrial Fans



Air Conditioners

Dust Collectors

NEW VARIATIONS ON A FAMILIAR THEME WITH

fine knitting

by

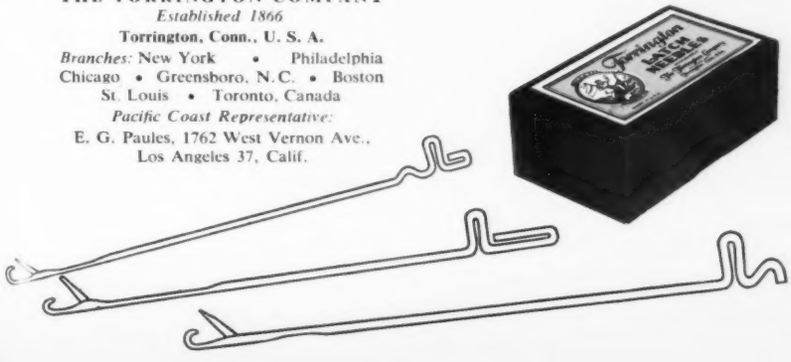
TORRINGTON NEEDLES

EVER POPULAR and subject to interesting new variations are the accessory articles that can be produced by knitting. A few of the many such items in which fine knitting is the basis of quality and sales appeal are illustrated here.

Every good knitter knows that fine needles contribute to knitting quality and to the efficiency of the machines in which they are used. That is why Torrington Needles—the special machine-made needles that come in the famous red and green box—are favored year after year by leading knitting mills. And remember—there's a Torrington Needle for every type of knitting!

TORRINGTON
Latch Needles

THE TORRINGTON COMPANY
Established 1866
Torrington, Conn., U. S. A.
Branches: New York • Philadelphia
Chicago • Greensboro, N.C. • Boston
St. Louis • Toronto, Canada
Pacific Coast Representative:
E. G. Paules, 1762 West Vernon Ave.,
Los Angeles 37, Calif.



Needle Bearings can Boost Production, too!

One good way to give your production a lift is to simplify design problems and assembly operations through the use of Torrington Needle Bearings.

The compact unit construction of these modern anti-friction bearings speeds progress at every stage . . . from design to final installation. Needle Bearings require only a bore machined to proper dimensions for the housing . . . installation is a simple press fit operation . . . no retainers or spacers are necessary to hold them in position. Thus, there are fewer production and assembly steps, fewer parts to handle and control when Needle Bearings are employed.

Torrington Needle Bearings also help to improve product performance. Their high radial capacity and compact design saves space and weight, and their efficient lubrication means better operation, less maintenance, and less time out for servicing or overhauling. So, production is aided in this way too—by keeping tools, machinery and handling equipment on the job.

Let our engineering department show how you can boost *both your production and your product's efficiency* through these and other Needle Bearing advantages. Write for our informative Catalog No. 32.

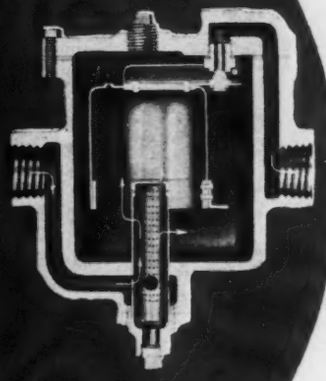
THE TORRINGTON COMPANY

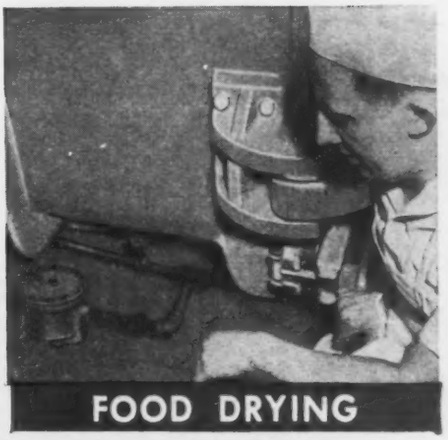
TORRINGTON, CONN. SOUTH BEND 21, IND.

Offices in All Principal Cities

TORRINGTON NEEDLE BEARINGS

GOOD STEAM TRAPS SAVE MONEY





FOOD DRYING

LINE DRIPPING

TEXTILE DRYING

FOOD WARMING

No one will quarrel with that! Plant operators know that air and condensation must be removed from steam coils and lines rapidly and completely, if the steam is to do its work efficiently.

A good steam trap will do this, day after day, for years, and with a minimum of maintenance or interruption.

The Sarco Inverted Bucket Trap illustrated is such a good steam trap, as testified by hundreds of users who employ them throughout their plants.

The advanced design includes straight-through conections for easy installation; a strainer built into every trap; stainless steel mechanism attached to the trap cover for easy inspection and cleaning.

Standard types, ½" to 2" up to 250 lbs.; forged steel types to 900 lbs. pressure. Ask for Catalog No. 350.

128

SARCO SAVES STEAM

SARCO COMPANY, INC.

Represented in Principal Cities

475 FIFTH AVE., NEW YORK 17, N. Y.

SARCO CANADA, LTD., TORONTO 1, ONTARIO

COMBUSTION EFFICIENCY

Correct Fuel Distribution in Firebox Cuts Boiler's Coal Need 15%

PATENTED, PRECISION INSTRUMENT INSTANTLY ANALYZES COMBUSTION GASES

Lubrication Engineer's Report

"A check on a boiler in a customer's* plant at Niles, Michigan, demonstrated how the Cities Service Heat Prover shows the fuel saving possible when the boiler is operating efficiently.

"On most under-feed stokers, there is greater depth of burning coal over the retort—leaving the sides and end of the grates with a thin layer of coal. This thin layer of hot coal soon burns through in spots leaving holes in the fire so that the grates are not covered entirely with coal. These bare spots on the grates allow the air to circulate through the firebox without coming in contact with the burning coal, thus increasing the stack temperature with attendant loss of combustion efficiency.

Grates Evenly Covered

"At intervals of thirty minutes, we took a poker, pushed the hot coal from the center, covering the holes and edges of the firebox with coal so that every part of the grates was covered. This registered highest efficiency on the Heat Prover dials.

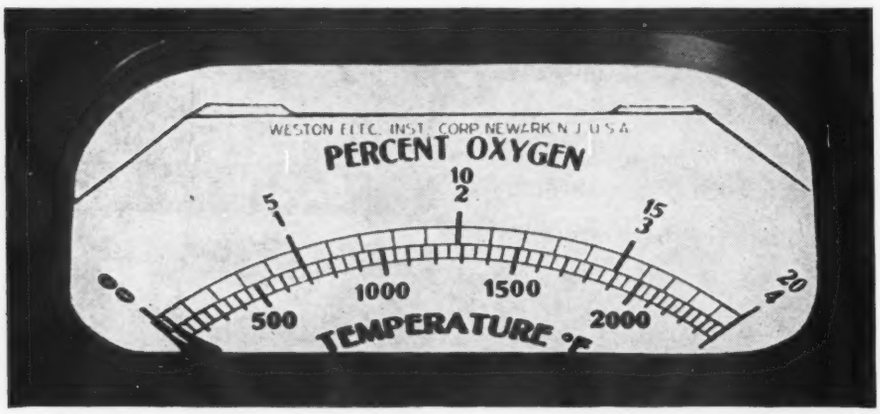
Fuel Cut 3000 lbs. Daily

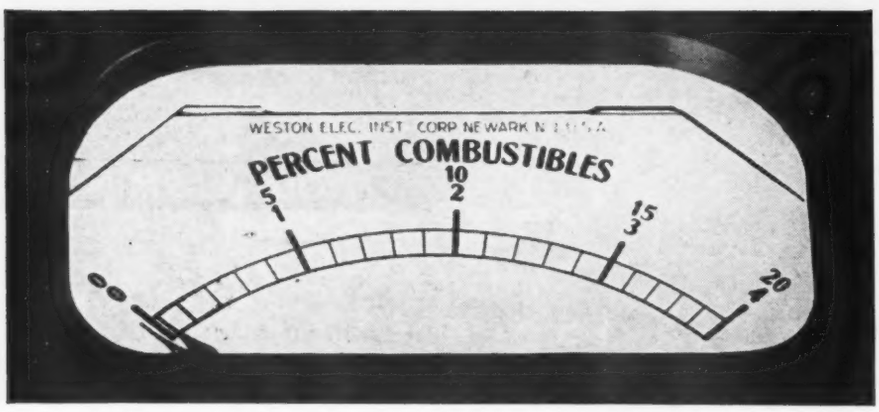
"This boiler was using 18,000 pounds of coal a day and by covering the holes in the fire every thirty minutes, daily consumption was reduced 3,000 pounds a day or a saving of about 15% to 17%."

Heat Prover Service Available

The Heat Prover is a portable combustion gas analyzer patented by Cities Service and operated by trained Cities Service engineers. It is used to check efficiency of every type of fuel combustion equipment. For information call your nearest Cities Service branch office, (Arkansas Fuel Oil Co., in the South); or write to Cities Service Oil Company, Sixty Wall Tower, New York 5, N. Y.

**Name on request.*





These dials on the compact portable Heat Prover instantly register an analysis of flue gases.

CITIES SERVICE OILS
ONCE-ALWAYS

FOR EVERY LUBRICATION PROBLEM CALL Cities Service FIRST!

Why do we like Stainless Steel? *Listen—*

"... Our old dye jigs were made of wood and ordinary steel. Four years ago we lined them with stainless steel. Today these linings look just as perfect as the day we put them in. I figure that stainless has saved us 30 to 40% maintenance. Besides that, we get no streaks of off color or off shades.

"... What's more, you can use any dyestuff in them—then just take a hose and rinse it right off. Cleaning with the old jigs used to take from 30 minutes to several hours—we had to boil them out with soda ash—now we clean the stainless jig lining and rolls in less than five minutes and they're really clean.

"... The old brass rolls in our acid ager had to be replaced three times a year and this was running expenses up. So I installed six stainless steel rolls. After a year's run we checked them with a mike and found not even .001" loss. Then we knew we has something *good!* Stainless steel rolls were installed throughout. They've been running 4 years now and they're still O.K.

"... Squeeze rolls in our continuous dyers used to give us trouble too. Old rolls had to be turned down when corroded. That meant the machine had to be speeded up to take care of the smaller diameter roll—usually a complicated and costly job. Stainless steel cured that. Now our stainless steel squeeze rolls *stay* just as good as new. It makes a difference when you figure that a corroded roll may cause 5 or 10,000 yards to run through badly stained.

"... We used to use from 4 to 8 dozen acid-handling buckets a month. That was mightly expensive. Since we started using stainless buckets, we don't average one dozen a month. It's cut our bucket costs by at least 75%. That saving runs into a pretty penny in five years.

"... I'd say that Stainless Steel has cut down our dye-house maintenance by about 90% and has increased our over-all plant efficiency at least 25%. Do you wonder that we more than just "like" stainless—we're *enthusiastic* about it."

• • •

(Quoted from an interview with the master mechanic of one of the largest finishing plants in the Greensville, S. C. district. His observations are based on more than ten years' experience with Stainless Steel.)

U·S·S STAINLESS STEEL

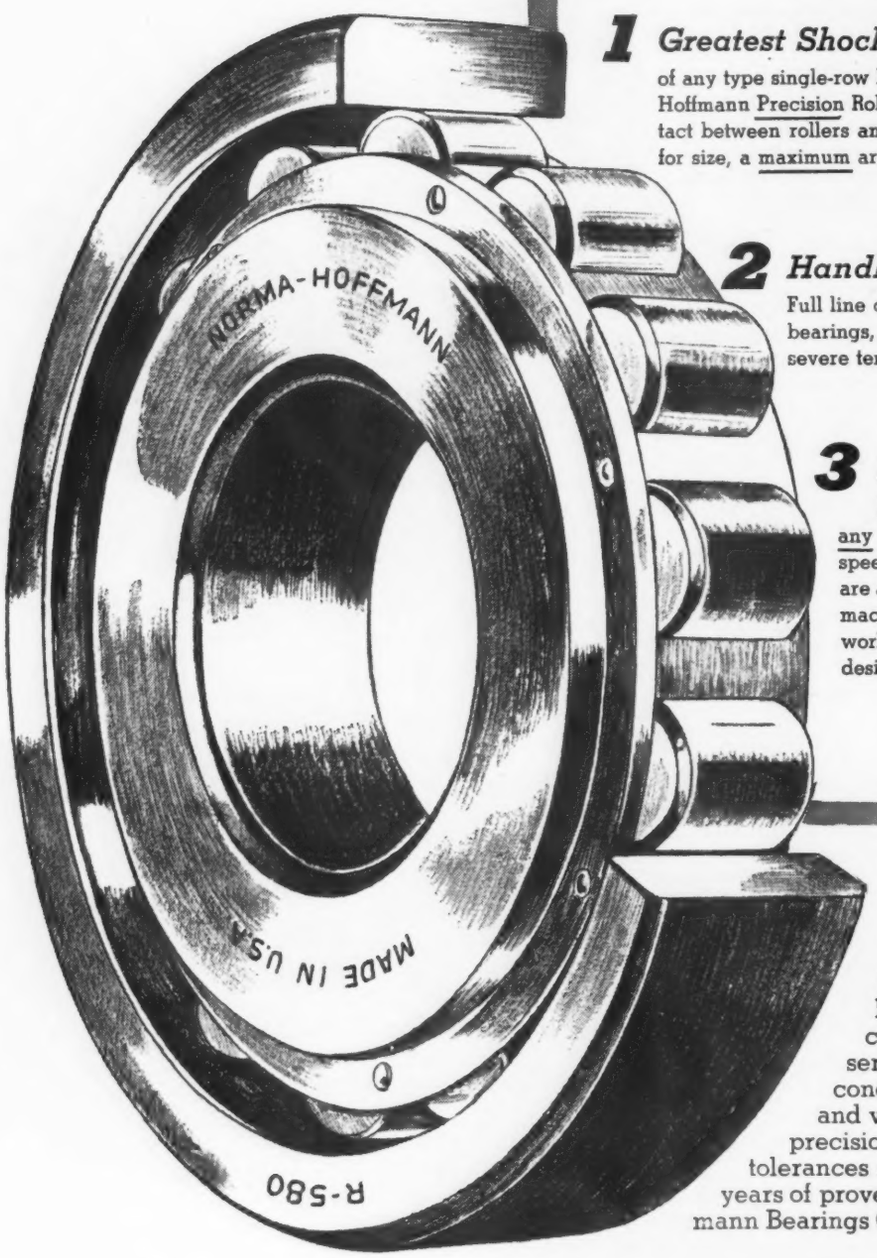
SHEETS · STRIP · PLATES · BARS · BILLETS · PIPE · TUBES · WIRE · SPECIAL SECTIONS

USS STAINLESS STEEL UNITED STATES STEEL

AMERICAN STEEL & WIRE COMPANY, *Cleveland, Chicago and New York*
CARNEGIE-ILLINOIS STEEL CORPORATION, *Pittsburgh and Chicago*
COLUMBIA STEEL COMPANY, *San Francisco*
NATIONAL TUBE COMPANY, *Pittsburgh*
TENNESSEE COAL, IRON & RAILROAD COMPANY, *Birmingham*
United States Steel Supply Company, Chicago, *Warehouse Distributors*
United States Steel Export Company, New York

UNITED STATES STEEL

Brutes for Strength



1 ***Greatest Shock Absorbing Capacity*** of any type single-row bearing. Here's the secret: Norma-Hoffmann Precision Roller Bearings provide full line contact between rollers and races. That means you get, size for size, a maximum area to support shock load.

2 ***Handles Up to 50% Overload*** Full line contact, the design feature of these bearings, also provides ample margin for severe temporary overloads.

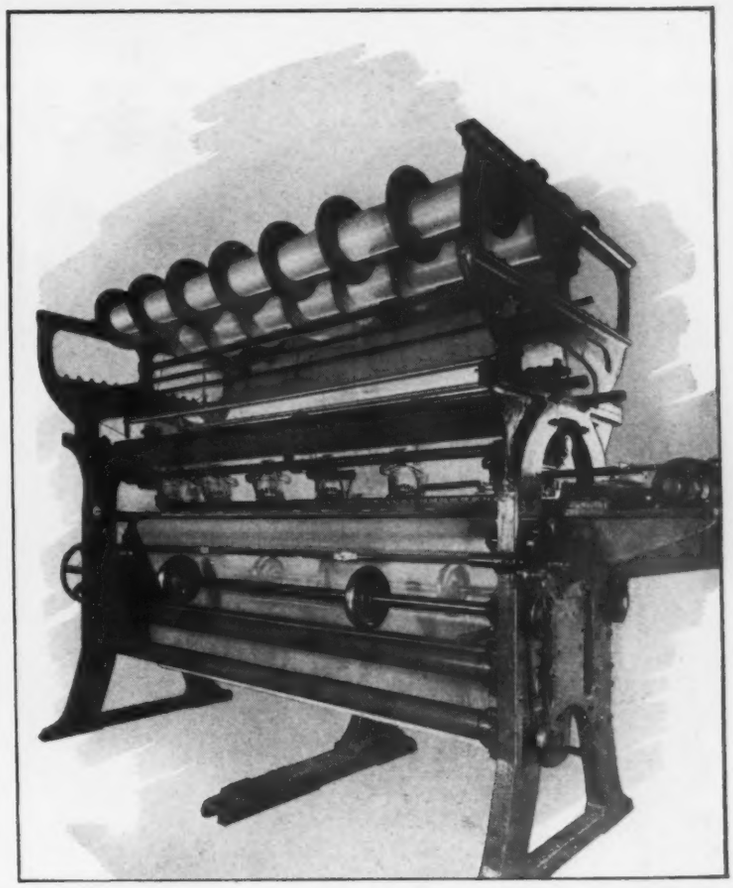
3 ***Lowest Coefficient of Friction*** under heavy load of any type bearing, plus unsurpassed speedability. These important benefits are a result of Norma-Hoffmann's 100% machined bronze retainer, precision workmanship and short, parallel roller design.

When the going is so tough no other anti-friction bearing will stand up—use Norma-Hoffmann Precision Roller Bearings. You will continue to get dependable service under critically severe conditions of speed, load, shock and vibration. These bearings are precision-made to unusually exacting tolerances and are backed by years and years of proved performance. Norma-Hoffmann Bearings Corporation, Stamford, Conn.

"NORMA-HOFFMANN"
Precision Ball, Roller and Thrust Bearings

FIELD OFFICES: NEW YORK, CHICAGO, CLEVELAND, DETROIT, PITTSBURGH, CINCINNATI, LOS ANGELES, SAN FRANCISCO, PORTLAND, ORE., SEATTLE, PHOENIX

Here's the latest in Raschel-Type Warp-Knitting Machines



The Kidde Knitter offers these 3 outstanding features

1. NEW HIGH SPEEDS

A new drum drive—combining advantages of index feed and worm feed —and a new motion on the needle bars — instead of the conventional piston type movement—contribute to the high sustained operating speeds of the Kidde Knitter.

Rugged construction withstands wear and tear of high speeds, as well as stresses of knitting rubber and similar materials. Tubular framework of the Kidde Knitter is extra-strong, extra-rigid. Anti-friction bearings are liberally used.

2. WIDE VERSATILITY

The Kidde Knitter handles practically any type of thread, yarn or elastic. A few examples: ELASTIC FABRICS for corsets, girdles, brassieres. DRESS FABRICS. VEILINGS and NETTINGS. CURTAINS. NARROW FABRICS—edgings, braidings, laces. SHOE CLOTH. KNITTED OUTERWEAR FABRICS for sweaters, polo shirts.

The machine is readily adapted to knitting simple or intricate patterns. Either single or double needle bars can be used, and a full 100 inches can be knit.

3. UNUSUAL ACCESSIBILITY

The Kidde Knitter has been designed to provide maximum accessibility to all parts. This feature simplifies the setting up and changing of patterns.

The entire swing bar assembly can be adjusted as a unit, in both vertical and horizontal directions. The stroke of the latch needles, as well as the guide needles, can be adjusted easily and quickly . . . without involving the necessity of changing cams. The full cloth roller can be readily removed from the side of the machine.

Construction of the Kidde Knitter embodies the combined experience of Kidde machine designers and men with a broad practical background in warp-knitted goods. A Kidde Knitter is in operation at our Bloomfield plant. Demonstrations can be readily arranged —just write us for an appointment.

KIDDE MANUFACTURING CO., INC. • BLOOMFIELD, NEW JERSEY

The word "Kidde" is the trade-mark of Walter Kidde & Company, Inc., and its affiliated companies.

NEW EDITION OF FIBERGLAS ELECTRICAL INSULATION MATERIALS CATALOG

Just off the Press

Anyone concerned with insulation for electrical, radio, electronic or video applications can use the Fiberglas Electrical Insulation Materials Catalog to advantage.

It contains complete information about the many forms of Fiberglas Electrical Insulation Materials. Indicates where and how to use this material to obtain its many advantages.

It describes the unique combination of electrically and mechanically important characteristics of Fiberglas, such as: resistance to high temperature, moisture and acid; favorable space factor and high tensile strength. It shows how the insulating impregnants increase the effectiveness of Fiberglas' inherent characteristics and add others such as high dielectric strength, insulation resistance and resistance to abrasion.

You will see why the use of this basic, inorganic, insulating material is increasing so rapidly—*why the swing is to Fiberglas.*

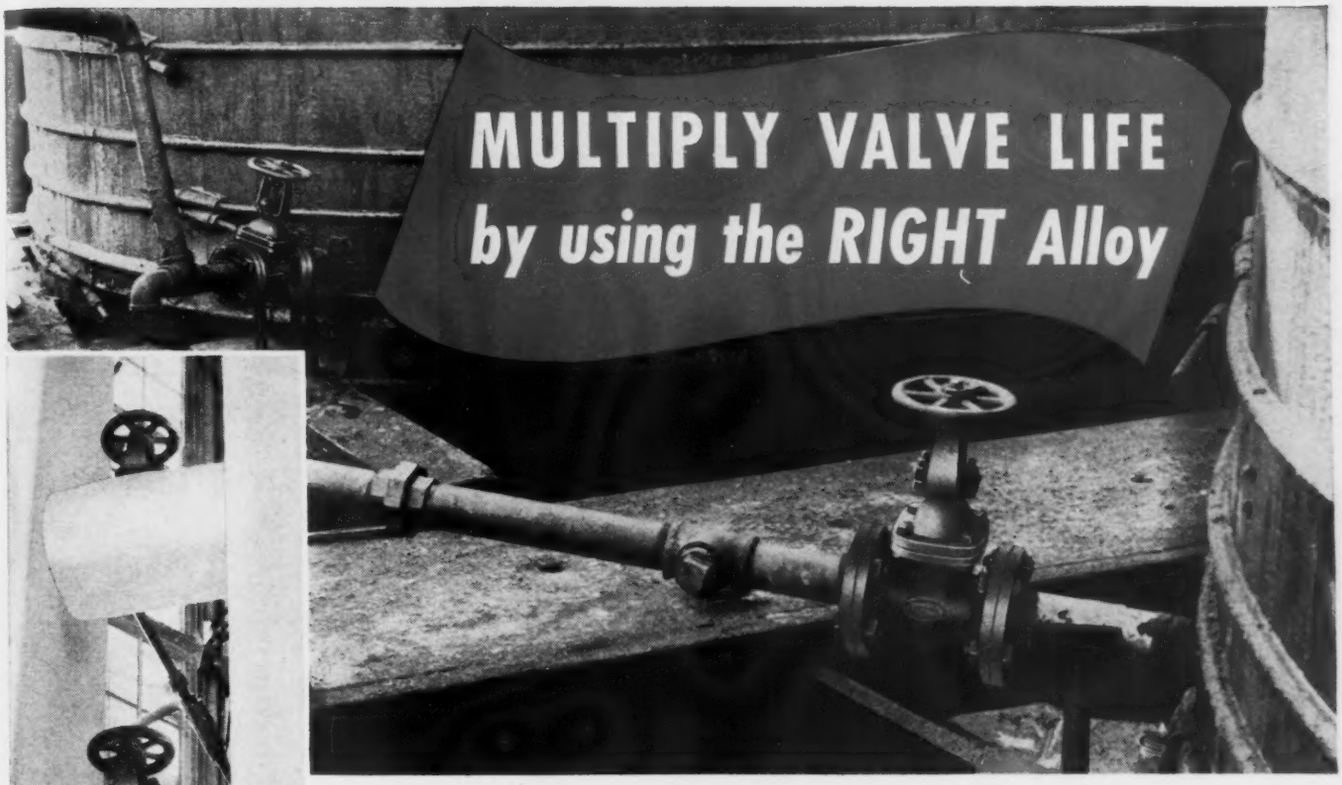
Be sure to have a copy of this new booklet in your file for ready reference. Write for copy today —there is no obligation. Owens-Corning Fiberglas Corporation, Dept. 864, Toledo 1, Ohio.

In Canada, Fiberglas Canada Ltd., Toronto, Ontario.

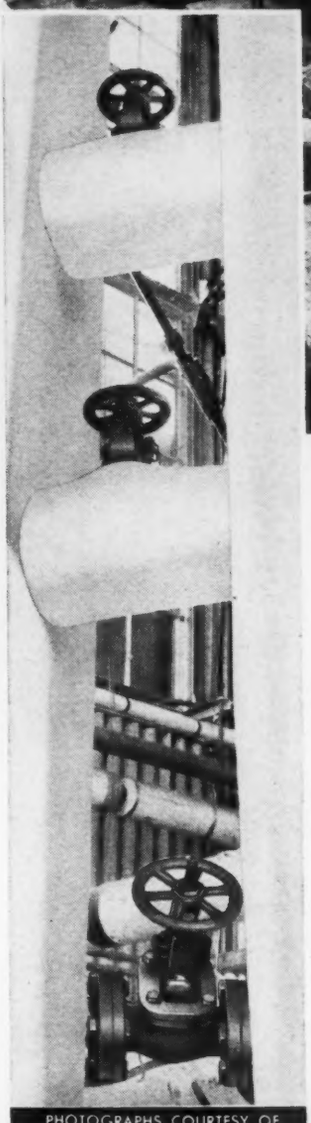
OWENS-CORNING

FIBERGLAS

TM. REG. U.S. PAT. OFF.



MULTIPLY VALVE LIFE *by using the RIGHT Alloy*



PHOTOGRAPHS COURTESY OF WOBURN CHEMICAL COMPANY, HARRISON, N. J.

IT IS amazing how valve life in corrosive fluid lines can be increased—even multiplied, by a change to the *right* alloy. In the application shown in the photographs here, the previous valves lasted two weeks. They were replaced by valves of another alloy that lasted two months. Then Aloyco Valves in the *right* alloy were installed—and they are still on the line AFTER THREE YEARS OF CONTINUOUS SERVICE. This is only one of many similar instances that we encounter frequently in our experience.

In types, sizes, and pressures also, Aloyco Valves meet the most exacting requirements of the process industries. Maximum corrosion resistance is assured by rigid analysis control, correct foundry practice and proper heat treatment of castings. Easy, positive action results from precision fabricating and careful assembly. Made by specialists who concentrate on stainless alloys, Aloyco Valves can save money in your plant. Consult us for the right alloys for your requirements.

ALOYCO VALVES

are made in Aloyco-20, 18-8-S, 18-8-SMo; and higher Chrome-Nickel Series--Worthite, Hastelloy, Monel, other alloys and pure Nickel.

ALOYCO

STAINLESS STEEL VALVES AND FITTINGS

GATE, GLOBE, Y, CHECK, TANK, SAMPLING AND V-PORT VALVES
SCREWED, FLANGED AND WELDED FITTINGS

ALLOY STEEL PRODUCTS COMPANY, INC.

1304 WEST ELIZABETH AVE. • LINDEN, N. J.

Specify Henderson!

- Complete foundry and machine shop facilities, experienced personnel, and engineering "know how" for the Quality-Controlled manufacture of all your repair part needs.

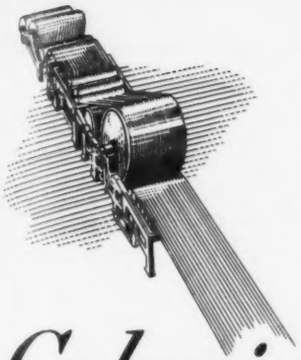
- Every Henderson precision-built replacement part has these combined advantages . . . closely supervised, modern molding and melting practices, accurate machining to a guaranteed fit, and engineering to exact specifications. These standard Henderson procedures on every job assure longer casting life, higher speeds, stepped-up production schedules and a more efficient, trouble-free operation throughout your mill.

Over a Quarter of a Century of specialized experience in service to the Textile Industry. We invite your inquiry.

Henderson FOUNDRY & MACHINE CO.

HAMPTON, GEORGIA

Better than Original REPLACEMENT PARTS *for Textile Machinery*

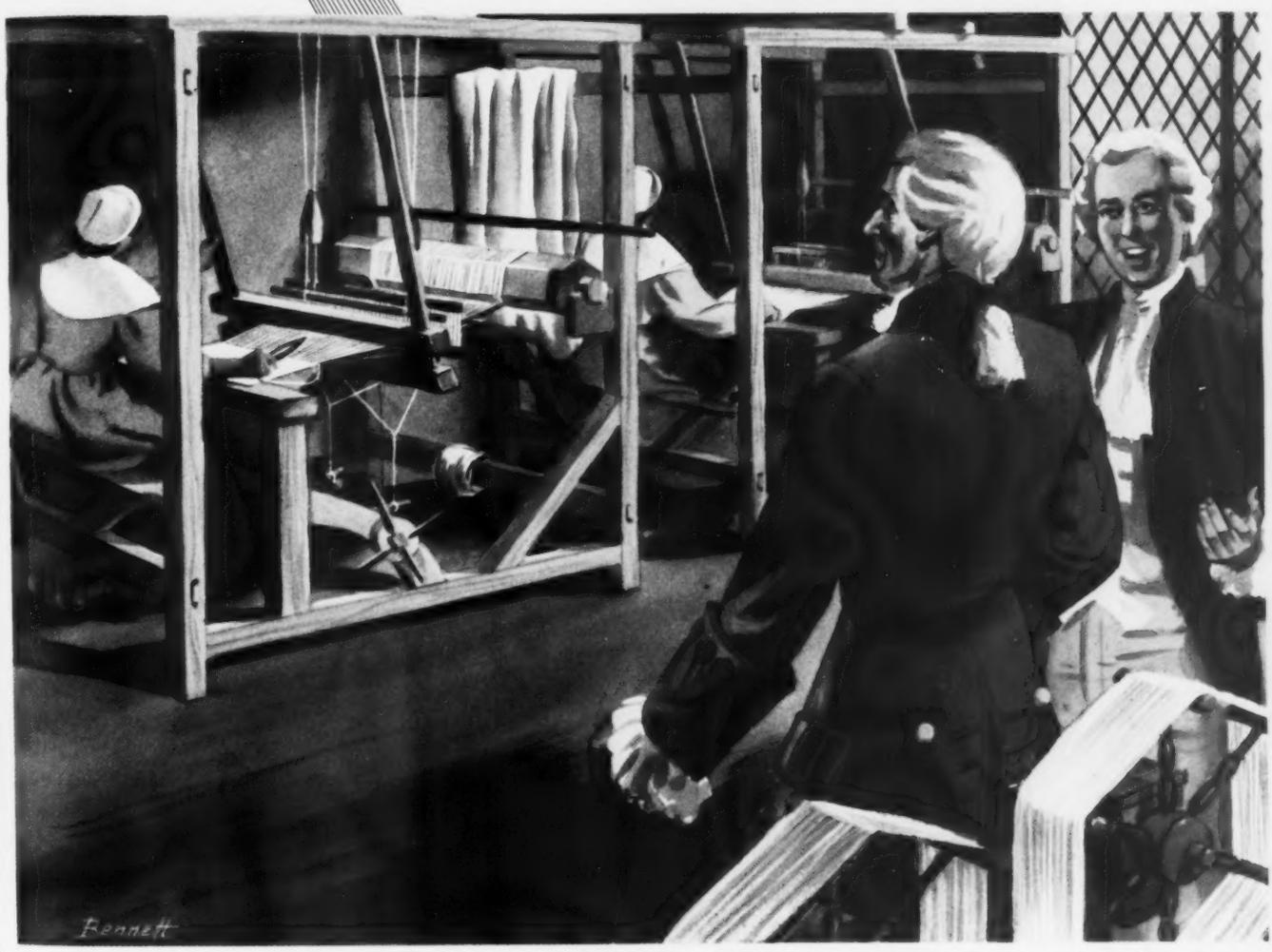


● George Washington wrote in his diary: "In this manufactory, they have the new invented carding and spinning machines . . . the latter would spin 84 threads at one time by one person . . . A number of looms, 15 or 16, were at work with spring-shuttles, which do more than double work . . . The cotton stuffs which they turn out excellent of their kind, warp and filling both now of cotton."

Colonial Weavers..

THE FIRST COTTON MILL IN AMERICA

Today—mill operators realize the importance of proper starch selection for particular types of warps. They choose Staley Textile Starches because the strict uniformity of every shipment permits sizing formulas to remain constant. Staley's complete line of modified and unmodified starches—for every textile use—has been developed by skilled chemists and is under rigid laboratory control during every step of the processing. If you are not already a Staley customer, now is the time to get acquainted with their prompt service and complete cooperation. Staley's can recommend the correct starch for all your sizing requirements.



Number Twelve in a series published as a Tribute to the Development of Weaving through the centuries

In 1798, President Washington visited one of the new cotton spinning mills and noted it in his diary

Staley's CORN AND SOY BEAN PRODUCTS REG. U.S. PAT. OFF.

STALEY STARCHES

A. E. STALEY MANUFACTURING COMPANY

DECATUR, ILLINOIS

ATLANTA · PHILADELPHIA · DALLAS · NEW YORK
SPARTANBURG · SAN FRANCISCO · CHICAGO · BOSTON

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WE DON'T OFFER YOU UTOPIA

WE DON'T present Alabama as being Utopia. Your hard business sense would tell you that even in Alabama there are business problems, but that same hard sense would tell you, after a review of the facts, that Alabama in many instances offers advantages to many types of industry considering the establishment of new plants.

Our industrial development engineers will gladly assist you with any economic studies you would like to have made in the event you expect to establish a plant in the South. Such assistance is, of course, given without obligation.

Your inquiries about Alabama are invited and will, of course, be kept confidential.

Industrial Development Department

ALABAMA POWER COMPANY

BIRMINGHAM, ALABAMA

GEE! made from GEON

Some more of the thousands of applications for GEON raw materials

THEY'VE made fly swatters and shower curtains —upholstery and floor tiles—wire insulation and acid tank linings—and thousands of other useful, attractive products from GEON polyvinyl raw materials. Here are some more—raincoat, hat, matching handbag, shoes, suitcase—colorful, nice to look at, long-lasting, easy to clean.

GEON, as can be seen, is an extremely versatile material. That's because of its unusual properties which may be compounded into finished products in a wide variety of combinations. Products made from GEON may be made to resist water, chemicals, sunlight, heat, cold, oils and greases, abrasion, mildew, ozone, and most other normally destructive factors. They may be flexible or rigid, clear or opaque, brilliantly or delicately colored.

And don't forget that GEON can be pressure or injection molded, extruded, calendered or cast into sheet or film. In solution or latex forms it can be applied as coatings for fabrics and fibres of all types as well as for paper and cardboard. There are applications for GEON in *every* home, *every* industry.

For more information about GEON, please write Dept. H-6, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio. In Canada: Kitchener, Ontario.

Products shown are made of Pantasote's Pantex and Pantasote's Wynsote.

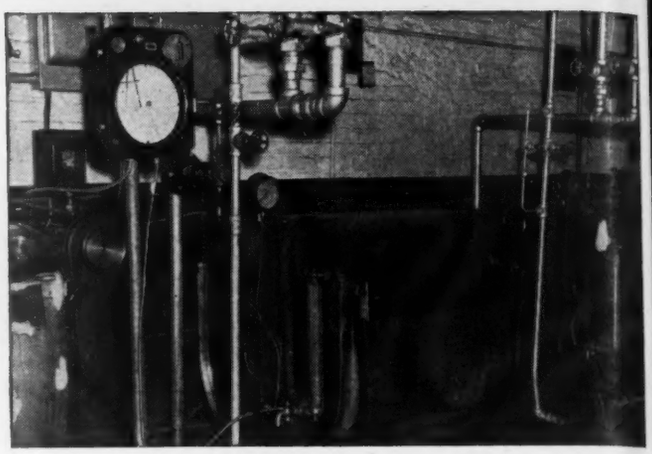
Geon
Polyvinyl Materials

TRADE MARK OF B. F. GOODRICH CHEMICAL COMPANY

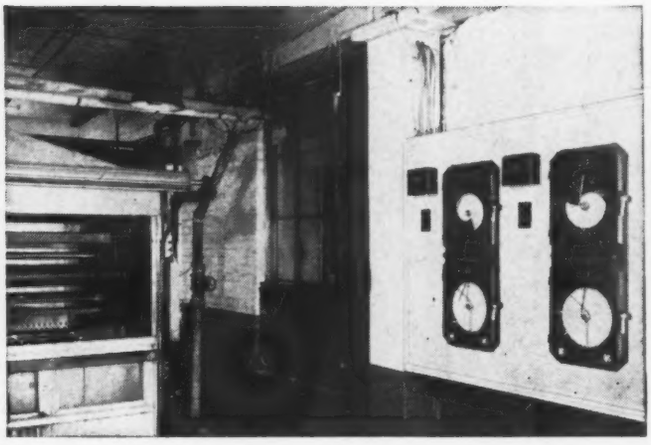
B. F. Goodrich Chemical Company

A DIVISION OF THE B. F. GOODRICH COMPANY

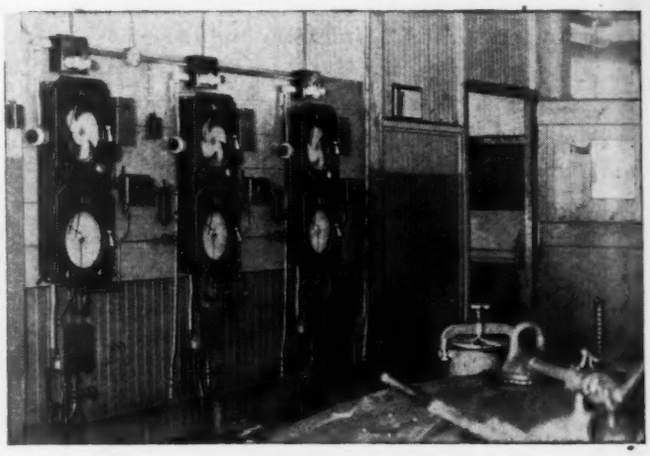
No matter how or what you want to dye—



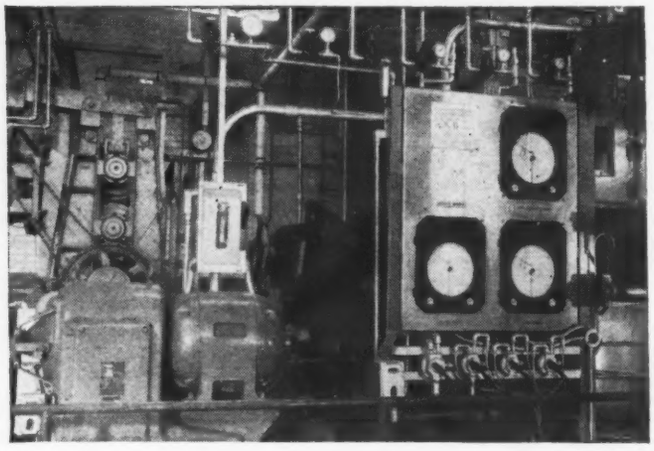
1. Show us a method of dyeing and we'll show you a Taylor Control System that will run it *automatically.* On this hosiery dye machine, Taylor Instruments maintain accurate temperature control and provide exact timing for each phase of the dyeing and finishing operation.



2. Want to save labor for more important jobs than watching time and temperature on piece dye machines? Let Taylor Fulscope Time Schedule Controllers do the job *automatically.* You get more uniform shades, a substantial steam saving, and most economical use of dye stuff.



3. You'll speed up package dye machine operations with Taylor Fulscope Time Schedule Controllers on the job. They repeat batch after batch with the same uniform shade. All the operator does is press a button. Taylor Accuracy does the rest!



4. On continuous dye machines these Taylor Fulscope Controllers control washer temperature, squeeze roll pressure, temperature in dye mixing tanks, temperature and level in dye pad box, and temperature and level in the developing section.

Taylor Instruments

MEAN

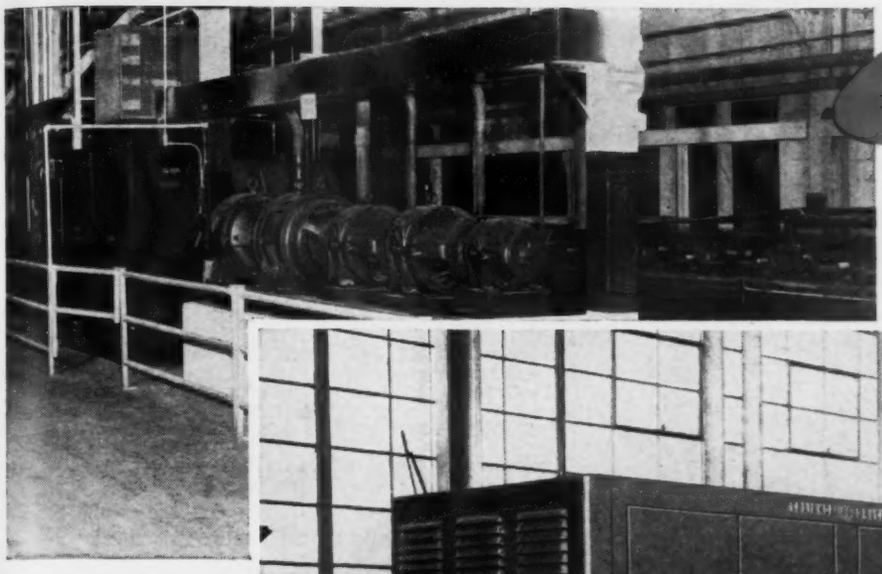
ACCURACY FIRST

IN HOME AND INDUSTRY

5. MORAL: No matter how you want to dye—we can work out an efficient Taylor Automatic Control System for you. Taylor Instrument Companies, Rochester, N. Y., and Toronto, Canada. *Instruments for indicating, recording and controlling temperature, pressure, humidity, flow and liquid level.*

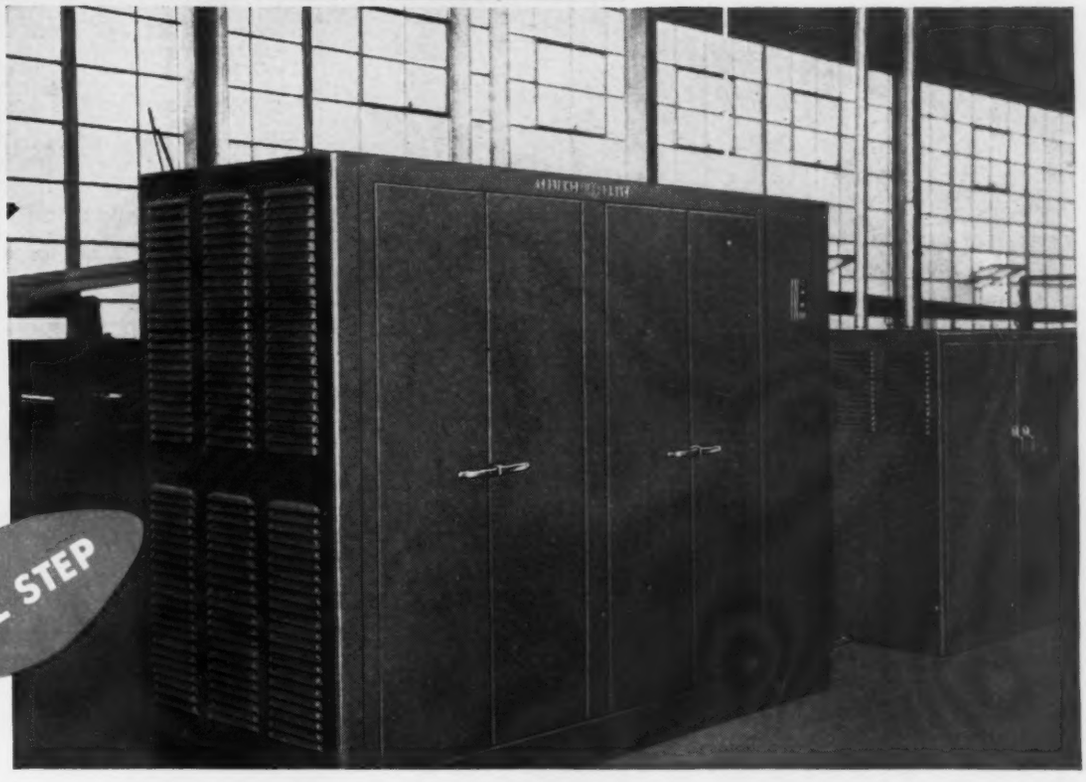
SPOT CONVERSION of A-c. to D-c. Power

for Efficient Textile Finishing and Printing



FIRST STEP

Typical Motor-generator Sets, which are exposed to accumulations of dust, dirt and harmful abrasives.



RELIANCE V★S DRIVE

THE FINAL STEP

Reliance V★S Drive (for on-the-spot conversion of A-c. to D-c. power) are compact, conveniently-packaged, factory-wired units. Filtered, ventilated, always clean—they offer you all the advantages of a separate motor room.

★ ★ ★

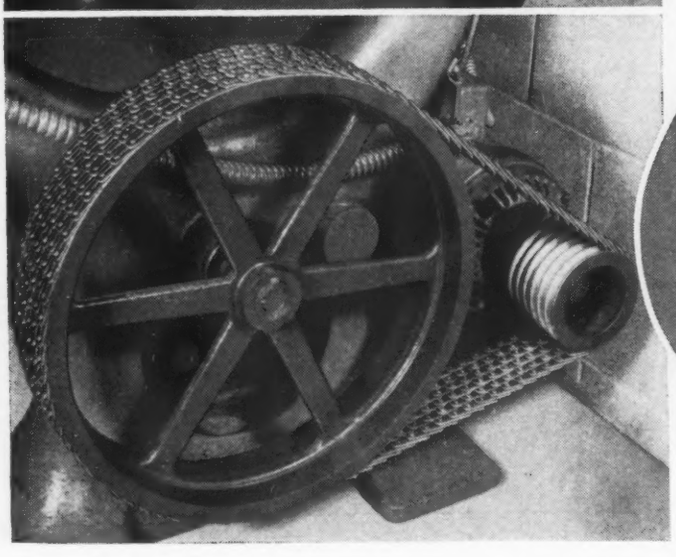
V★S, the *All-electric, Adjustable-speed Drive for A-c. Circuits,* is available in sizes up to 200 horsepower. The great flexibility this drive brings to any operation includes an infinite range of stepless speed changes—instantaneous stops and starts and many other specialized functions. Control can be automatic or manual—either at the machine or from remote stations. You will find more important information on how V★S increases production and cuts costs in Bulletin 311. Write for it today!

RELIANCE ELECTRIC & ENGINEERING COMPANY
1086 IVANHOE ROAD • CLEVELAND 10, OHIO
Sales Representatives in Principal Cities

RELIANCE A-C D-C MOTORS "MOTOR DRIVE IS MORE THAN POWER"

He's got a choice of 316 sizes

with only 4 reels of Veelos



JUST *four reels of Veelos*, the link V-belt, give you a choice of *316 standard sizes* of industrial and fractional endless V-belts. With these four handy reels, a large costly inventory of endless belts is eliminated. Stock records are simplified. There are no spare V-belts to age and deteriorate.

Standard reels of Veelos hold 100 feet . . . require only minimum storage space. Belt replacements for any length drive are always on hand . . . always convenient to locate.

Veelos is quickly and easily installed on any drive. On drives with fixed centers or outboard bearings, it is installed without moving the motor or dismantling the machine . . . in just a few minutes. It provides substantial savings in installation and maintenance costs.

Veelos sales engineers are located in principal cities; 300 distributors throughout the country.

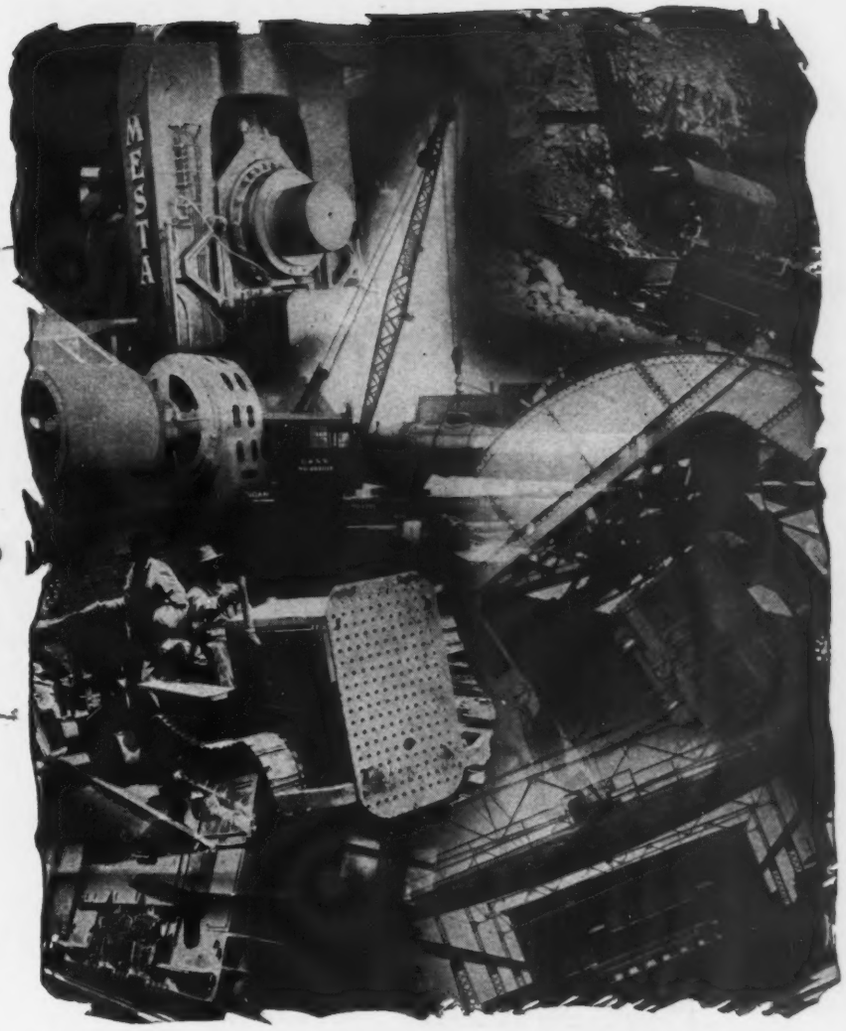
MANHEIM MANUFACTURING & BELTING CO.
MANHEIM, PENNSYLVANIA

VEELOS
THE LINK
V-BELT

Tested
Approved
Adopted
by American Industry

Adjustable to any Length
Adaptable to any Drive

"No bearing troubles..."



"...with Tycol E.P. Lubricants"

"Not a bearing overheated . . .
Service-life doubled . . .
Races undamaged . . .
Better performance . . .
Maintenance costs cut . . ."

— were the statements made recently by a lubricating engineer. "Yet," he went on, "the anti-friction bearings in our plant operate continuously under severe heat and moisture conditions — tremendous loads."

This is one of the many uses of Tycol E. P. Lubricants. For more information call, write, or wire your nearest Tide Water Associated Office.

TYCOL
INDUSTRIAL LUBRICANTS

Boston • Charlotte, N. C.
Pittsburgh • Philadelphia

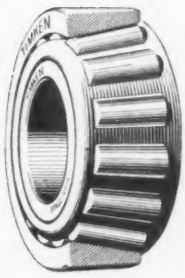
TIDE WATER ASSOCIATED OIL COMPANY
17 BATTERY PLACE - NEW YORK 4, N. Y.

LUBRICATION—"ENGINEERED TO FIT THE JOB"

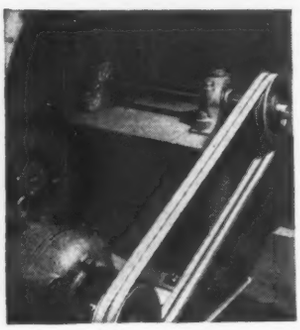
WE MOUNT IT—

WE HOUSE IT—

WE SEAL IT—



DODGE PUTS TIMKEN BEARING PRECISION INTO *WORKING CLOTHES*



THE DODGE-TIMKEN DOUBLE INTERLOCK PILLOW BLOCK provides a precision bearing assembly, *ready for immediate service.* You simply lock it on the shaft and run at full speed and full load. All the parts required for mounting this bearing are manufactured by Dodge — cast in our foundry and carried through many precision operations on the latest machine tool equipment. Dodge mounts, seals and houses the bearing assembly — with its double row of precision-finished rollers — and delivers it fully assembled, adjusted, lubricated — ready to go to work. The Dodge-Timken Double Interlock is one of the famous Dodge 30,000 hour line, covering a wide range of industrial bearing requirements, and ordinarily is available promptly from distributors' stocks. Look for the Dodge Distributor in your classified telephone directory under "Power Transmission Equipment."

DODGE MANUFACTURING CORPORATION • MISHAWAKA, INDIANA

DODGE
MISHAWAKA

THE SYMBOL THAT CAME TO LIFE

The man who wears this symbol gives you the correct answers to your problems in mechanical transmission of power. He is the Dodge Transmissioneer.

Transmissioneering Means Advanced Design in Power Drives

Copyright, 1946, Dodge Mfg. Corp.

NAME PLATES

FOR YOUR NAME PLATE REQUIREMENTS, WRITE OUR SUBSIDIARY,
ETCHING COMPANY OF AMERICA, 1520 MONTANA STREET, CHICAGO 14, ILLINOIS

More and more textile men say: "IT PAYS TO DRAX*!"

Johnson's DRAX

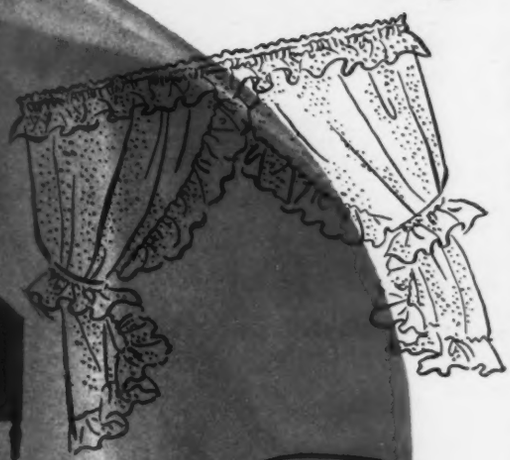
*Trademarks Reg. U. S. Pat. Off.

protects fabrics from dirt, soil and liquids!

Every month more mill owners, converters and finishers are realizing the benefits of DRAX. They're finding out that DRAX-protected fabrics make for profits and highly satisfied customers. DRAX gives fabrics an improved "feel" and appearance, makes them resistant to soiling, spotting and water. Consumers like DRAXed merchandise because it keeps its fresh, new look longer.

DRAX, made by the makers of Johnson's Wax, is a stable wax emulsion. It's easy and inexpensive to use, because it is simply "rinsed" into fabrics . . . requires no extra equipment or special skills. Furthermore, DRAX may be used not only on cellulose fibers, but on any textile. It's inert, non-flammable. Customers may have their household fabrics and clothes re-DRAXed at the many laundries and dry cleaners offering DRAX service.

National Johnson advertisements carry the DRAX story. Attractive tags identify DRAXed merchandise. Do as so many other textile men now do — DRAX. Write for full information about DRAX today!



DRAX IS MADE BY THE MAKERS OF JOHNSON'S WAX

(A NAME EVERYONE KNOWS)

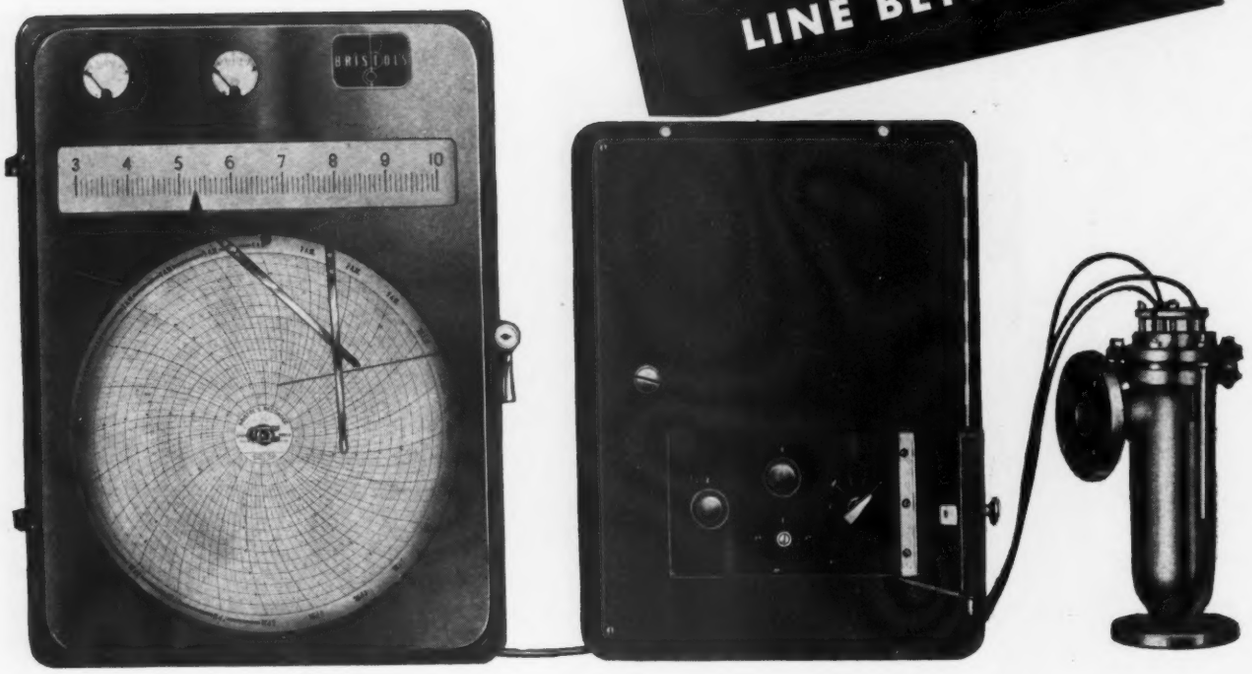
This DRAX tag is a sign of plus value

Write for Free Booklet

S. C. JOHNSON & SON, INC.
Fabric Finishes Division
Racine, Wisconsin

In Canada: S. C. Johnson & Son, Ltd., Brantford, Ont.

STEADFAST HELP IN WALKING THE FINE LINE BETWEEN



...TOO ACID...TOO ALKALINE

HOW TO BE SURE ABOUT...pH...

Turn the problem over to a Bristol Continuous pH Controller and let it, automatically, handle such responsibilities as

- neutralizing after carbonizing
- condition of water for dye and bleach house
- neutralizing dye house waste
- testing condensate from heating coils and automatically dumping it if acid.

Periodic sampling for test will no longer be necessary. The instrument, informed of conditions, automatically adjusts for the correct pH value.

The Bristol Recording pH Controller, which operates Synchro-Valves, is designed around Bristol's exclusive Free-Vane principle, the most accurate of all air-operated designs. The Free-Vane is completely frictionless — it floats between two opposing jets of air — so there is no retarding action on the measuring element. An absolute true record of actual results is obtained.

Write for Bulletin 536 on pH Control, addressing THE BRISTOL COMPANY, 157 Bristol Rd., Waterbury 91, Conn. The Bristol Co. of Canada, Ltd., Toronto, Ontario. Bristol's Instrument Co., Ltd., London, N. W. 10, England.

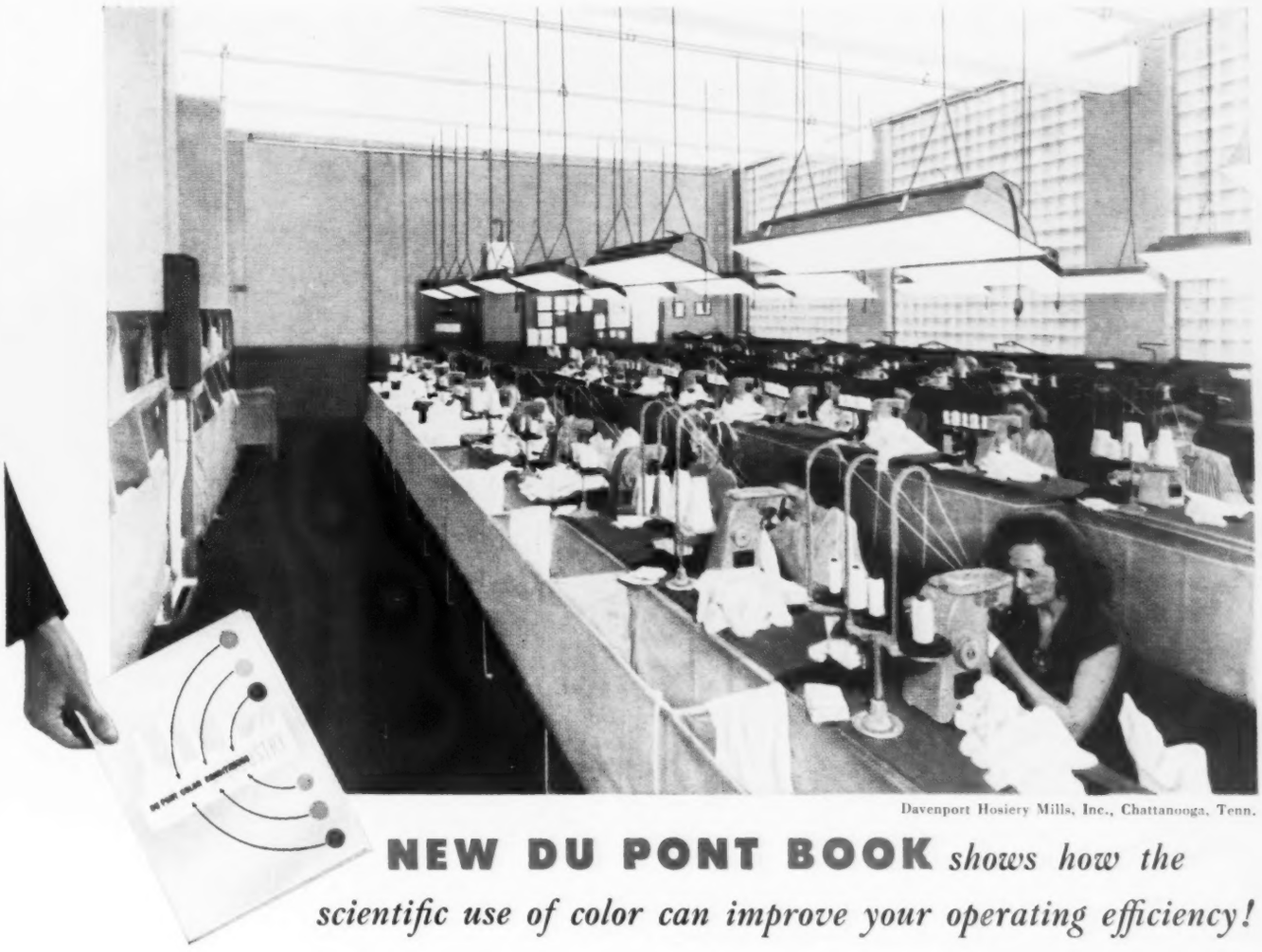
BRISTOL

Engineers process control for better products and profits

AUTOMATIC CONTROLLING AND RECORDING INSTRUMENTS

PRODUCTION UP...PROFITS UP

with Du Pont Color Conditioning



Davenport Hosiery Mills, Inc., Chattanooga, Tenn.

NEW DU PONT BOOK *shows how the scientific use of color can improve your operating efficiency!*

YOU'LL FIND the complete story of DU PONT COLOR CONDITIONING in this authoritative new book, just off the press. Typical case histories show how you can use color profitably in your plant—in shop areas, offices, washrooms and cafeterias. COLOR CONDITIONING FOR INDUSTRY is a "must" on the reading list of every executive and maintenance man concerned with the efficiency and welfare of his employees.

This practical plan has paid worthwhile dividends in hundreds of industrial plants throughout the country. It helps you select scientifically correct colors for walls, machinery and equipment. See how COLOR CONDITIONING can help you cut worker fatigue and boost production. Mail the coupon today!

DU PONT
REG. U. S. PAT. OFF.

Color Conditioning

BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY

E. I. du Pont de Nemours & Co. (Inc.), Dept. T-11
Finishes Division, Wilmington 98, Del.

Please send me free of charge your new 32-page book that shows what COLOR CONDITIONING can do for my plant.

*Name*_____ *Title*_____

*Firm*_____

*Address*_____

*City and State*_____

UNION PACIFIC RAILROAD SERVES SUN VALLEY

Re-opens December 21st

Sun Valley · Idaho

Its war duty as a Navy rehabilitation center ended, America's famous year 'round sports resort invites you to enjoy a winter vacation in Idaho's Sawtooth Mountains.

For experienced and intermediate skiers—a variety of fast open and partially timbered ski-runs. For beginners especially—but available to all—instructions by a selected staff of experts headed by Friedl Pfeifer. Special skiing events have been scheduled for winter season.

Electrically operated chair-lifts make it possible to enjoy a maximum of ski-runs.

Other activities include skating, sleighing, and swimming in warm-water outdoor pools. And in evening hours—music and dancing.

Accommodations at a wide price range. For protection of guests, reservations must be confirmed in advance. Write or wire—

W. P. ROGERS, Gen'l Mgr., Sun Valley, Idaho

WINTER SPORTS UNDER A "SUMMER SUN"

wo with one standard of uniformity . . .

KODA

Eastman continuous-filament acetate rayon yarn, smooth and free-running, mile after mile—with fine balance, strength, resiliency, suppleness. Strict laboratory control at every step of its manufacture assures a yarn virtually knot-free—the foundation for a flawless fabric.

TECA

Eastman crimped acetate rayon staple—of the same purity as Eastman yarn—subjected to equally exacting tests for uniformity. Today's preferred fiber for blends, Teca acts to reduce shrinkage, crushing, and sagging; behaves well on any spinning system—cotton, rayon, wool, or worsted.

Eastman Acetate Rayon

For further information about Koda and Teca, consult A. M. Tenney Associates, Inc., 10 East 40th Street, New York 16, Sales Representatives for Tennessee Eastman Corporation (Subsidiary of the Eastman Kodak Company), Kingsport, Tennessee.

New Slasher Drive...

30 REEVES Variable Speed Transmissions are in use in this modern Slasher room

Combines Noiseless Operation, Accurate Stretch Regulation, and Complete Push-Button Control in Simplest Form . . .

● From every standpoint—mechanical simplicity, efficient operation, results accomplished, and ease of maintenance—the new REEVES Slasher Drive represents an important advancement in modern textile processing.

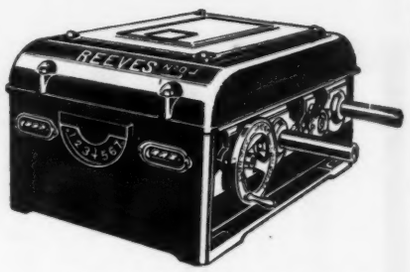
The REEVES Slasher Drive operates noiselessly because it eliminates the conventional drive assembly, consisting of two shafts with tight and loose pulleys, direct gears and back gears, and drives directly to the front end of the slasher. The number of running parts subject to wear and requiring maintenance is reduced to the minimum.

With this REEVES installation, the usual positive drive to the size box rolls is removed. Accurate stretch regulation between size box and front roll is obtained with Micro Speed Adjuster, which can be set for zero or any per cent of stretch above zero with the assurance that the setting will be held perfectly without further adjustment by the operator.

Yarn tension between front roll and loom beam is *automatically* controlled, providing a beam of uniform density from start to finish, an important factor in reducing end breakage. The yarn's retention of its elasticity prevents end breaks in the loom and loom stops . . . produces cloth free of defects . . . assures maximum production of highest quality goods in the weave room.

The REEVES Slasher Drive features complete push-button control, with as many control stations as desired. There are no complicated controls to adjust, set or maintain. A new slasher man can step right in on the job because all he has to learn is to press three standard push buttons, marked "Stop," "Creep" and "Run." He can always start at slow speed and quickly attain the desired running speed.

The installation represents the simplest form of drives and controls which can be serviced and maintained by any mechanic with eyes to see and hands to use a wrench or screwdriver.



REEVES Variable Speed Transmission, horizontal enclosed design

The REEVES Slasher Drive may be operated with any moisture content control (see illustration above, left) and its operation is entirely automatic.

For production of a better product at a faster rate and at a lower cost, investigate the REEVES Slasher Drive. A seasoned REEVES Speed Control engineer will give you complete details. Write today.

REEVES PULLEY COMPANY • DEPT. W • COLUMBUS, INDIANA

Accurate Variable

REEVES Speed Control

Gives the Right Speed for Every Job!

LAWRENCE SPINNA CALF

. . . the most generally used calfskin

For fine spinning no other roll covering material takes the place of calfskin . . . and among those mills that have built a reputation for quality, Lawrence's Spinna Calf is the brand most generally used . . . Spinna Calf has exactly the right surface for smooth, sure drafting. It is non-sweating. It holds its shape and "body". It can be depended upon for unvarying quality. Tell your roll coverer you want Spinna—preferred by so many of the quality spinners . . .

A. C. Lawrence Leather Company, Peabody, Mass., manufacturer of Lawrence Calfskins—*1st choice for aprons.*

Represented by H. H. Hersey, Greenville, South Carolina.

A. C. LAWRENCE LEATHER CO. TEXTILE LEATHERS PEABODY MASS.

EVERY YEAR MORE PEOPLE DECIDE LEATHER IS BEST

Production, Prosperity and POWELL VALVES

The real wealth of a nation lies in its power to produce. And the greater the production, the greater the prosperity of its people.

Production depends on many things. Not the least of these is the efficiency of the equipment that controls the flow of the innumerable media that constitute the lifeblood of Industry.

Powell's contribution to national prosperity is a line of valves that is so complete that today there are Powell Valves adapted to *every* service in *every* branch of modern industry.

The Powell Line includes Bronze and Iron Valves of all required types, designs and sizes; Cast Steel Valves of all types in pressure classes from 150 to 2500 pounds; and a complete line of valves for Corrosion Resistance, including many special designs and made in the widest range of Pure Metals and Special Alloys ever used in making valves.

The Wm. Powell Co., Cincinnati 22, Ohio

DISTRIBUTORS AND STOCKS IN ALL PRINCIPAL CITIES

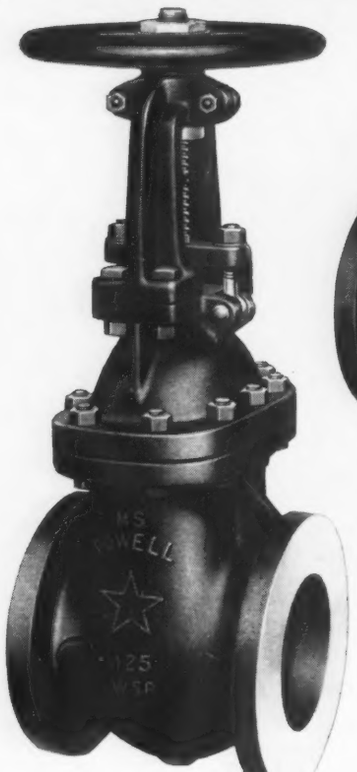


Fig. 1816—All Iron Gate Valve for 125 pounds W. S. P. Made in sizes 2" to 30", inclusive. Has flanged ends, bolted flanged yoke, outside screw rising stem and taper wedge solid disc.

Fig. 1259—All Iron Swing Check Valve for 125 pounds W. S. P. Made in sizes 2" to 12", incl. Has flanged ends, bolted flanged cap and regrindable, renewable iron disc. Disc, when wide open permits full, unobstructed flow through the valve body.

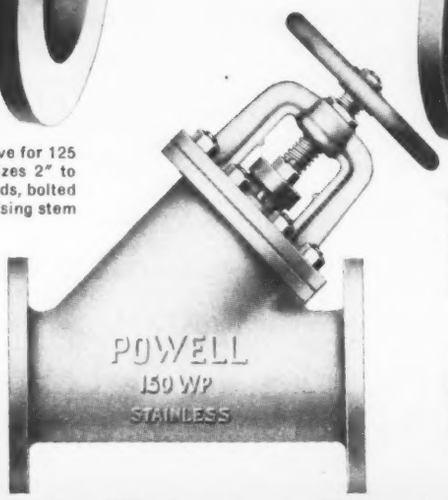


Fig. 1944—Large size 150-pound Stainless Steel "Y" Valve with flanged ends, bolted flanged yoke-bonnet and outside screw rising stem. Made in sizes 2½" to 12", inclusive.

Fig. 457—All Iron Globe Valve. Has flanged ends, bolted flanged yoke, outside screw rising stem and regrindable, renewable iron seat and disc. Made in sizes 2" to 12", inclusive.

Catalogs furnished on request. Kindly state whether you are chiefly interested in Bronze, Iron, Cast Steel or Corrosion-Resistant Valves.

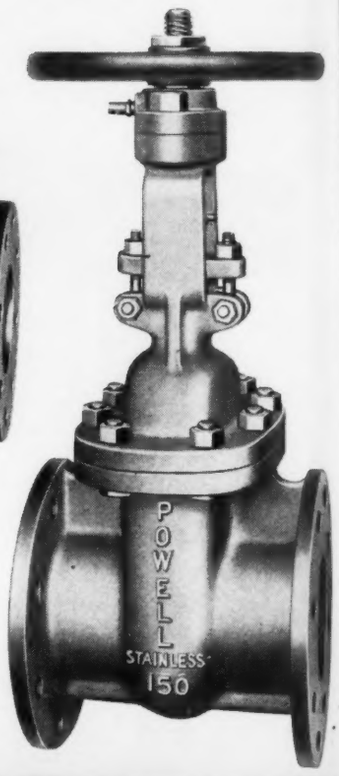


Fig. 2453-G—New Standard 150-pound Stainless Steel Gate Valve with flanged ends, bolted flanged yoke-bonnet, outside screw rising stem and taper wedge solid disc. Made in sizes 2½" to 8", incl.

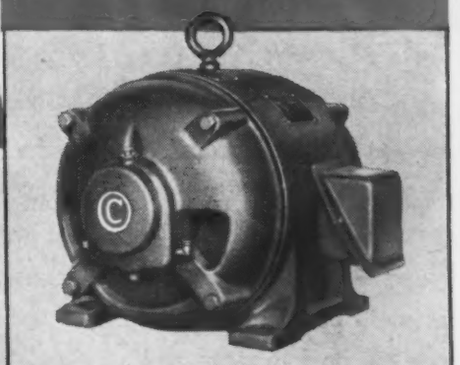
POWELL VALVES

Get Protection

Against Atmospheric Hazards With One of CENTURY'S 4 Kinds of Motor Frames . . . . . .

Adequate protection against practically any destructive atmosphere is assured by one of the four kinds of construction available on Century modern industrial motors. On your job, the right protection for the vital parts of Century motors assures long life and trouble-free performance.

1 Century Form J, open rated, general purpose motors will give the protection needed on most ordinary installations. Because the upper half of the motor frame is closed, falling chips or small solids and dripping liquids cannot fall into the motor.



Form J — General Purpose Application

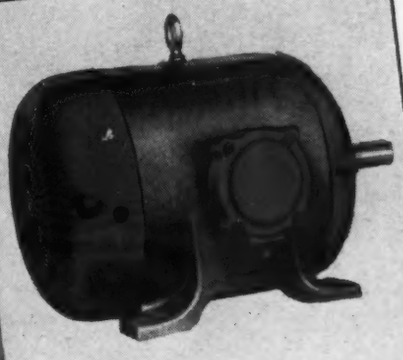
2 Century Splash Proof motors give you protection against splashing or dripping water—are ideal where plants and machinery are washed down with a hose, or for outdoor installations.

Splash Proof Protection

3 Century Totally Enclosed Fan Cooled motors keep out dust, dirt, grit, abrasives, oil, mist or fog because the vital parts of the motor are isolated from the outside atmosphere.

TEFC—Protects Against Destructive Dust, Grit, Powdered Materials

4 Century Explosion Proof motors are used where the atmosphere is charged with explosive materials, such as gases, or grain dusts held in suspension.



Explosion Proof

458

In addition, special Century insulation may be provided for installations where the atmosphere is heavily charged with corrosive or otherwise acid, alkali, or other destructive fumes.

These protective Century motor features may be combined with a wide range of motor types and sizes to provide a perfect combination for nearly any application. Century motors are built in sizes from 1/20 to 600 horsepower.

Specify Century Motors on all your electrically powered equipment. Engineered to the functional characteristics of the machines they drive to assure top performance—Century Motors are a vital factor in producing a better product at a lower cost.

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CENTURY ELECTRIC CO.

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In the *Higher Efficiency* Brackets...

The smoothness and evenness with which water flows through your pump has a lot to do with pumping costs. In Gardner-Denver centrifugals, rigidly controlled foundry practices assure absolutely smooth water passages. Furthermore, these passages are properly proportioned to eliminate unnecessary eddies, back-waters and sudden changes in velocity. This—plus the inclusion of every other worthwhile hydraulic and mechanical feature—is why Gardner-Denver centrifugals are in the higher efficiency brackets. For complete information, write Gardner-Denver Company, Quincy, Illinois; Atlanta, Ga; Birmingham, Ala.; Boston, Mass.; Hazleton, Pa.; Knoxville, Tenn.; Washington, D. C.; New York, N. Y.; Philadelphia, Pa.; Pittsburgh, Pa.

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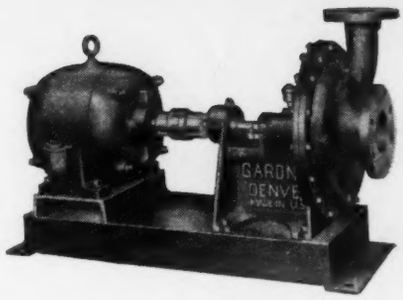
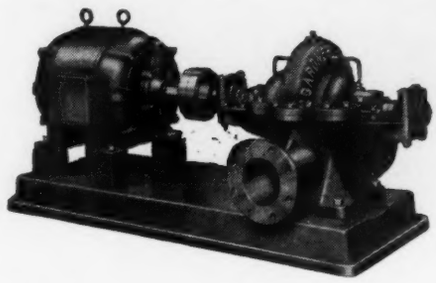
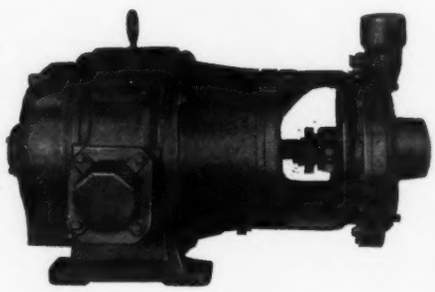


Side Suction. *Designed for general service, these Gardner-Denver Side Suction Pumps are low in first cost, as well as in installation costs. Capacities up to 2.3 million gallons per day, or 1600 gallons per minute, can be handled in heads up to 100 feet.*



Double Suction. *Gardner-Denver Double Suction Single-Stage Centrifugal Pumps cover all heads up to 300 feet. These pumps have a horizontally split case for easy accessibility. Wearing rings are easily checked. The entire rotor assembly can be removed without disturbing the motor or piping, or exposing the bearings.*



Close Coupled. *In these Gardner-Denver Centrifugals, pump and motor are combined to form a complete, compact unit. Pumps can be installed in any position—on floor, wall or ceiling. These centrifugals are designed for capacities up to 250 gallons per minute, and heads up to 250 feet.*

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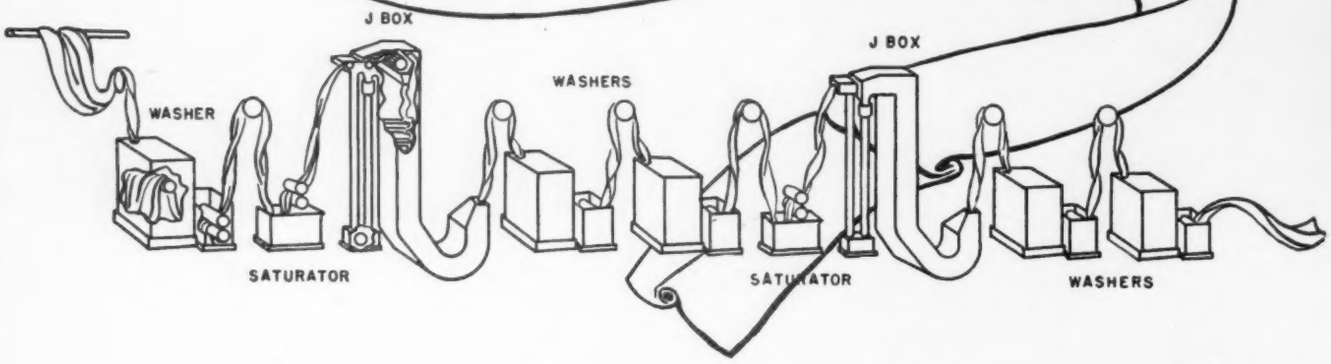
CONTINUOUS BLEACHING NEEDS "Continuous balance"



One hundred and ninety yards per minute of *uniformly* bleached cloth—and still no indication that the upper limit has been reached. At such tremendous speeds variations in process conditions, principally temperature, can occur swiftly and with great effect on uniformity. Using conventional types of temperature controllers, hundreds of yards could pass critical temperature points such as J-Boxes before the controller would detect and correct temperature changes.

Brown *ElectroniK* "Continuous Balance" Potentiometer.

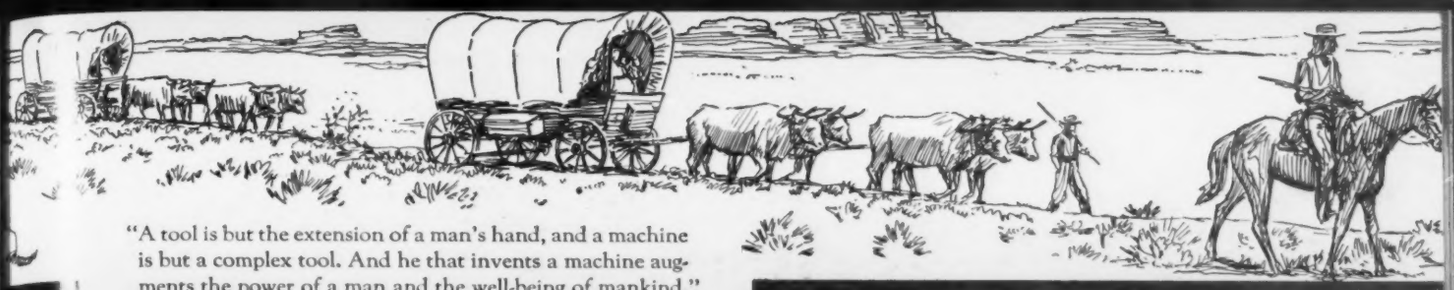
"Continuous Balance", the electronic operating principle of the Brown *ElectroniK* Potentiometer, holds temperatures right on the line despite changes in speed or load conditions. The greater sensitivity and speed of response of the *ElectroniK* keeps pace with the continuous bleaching system. The *ElectroniK* places *no limit* on the speed at which the system is operated.

This unchallenged *ElectroniK* is working with the complete line of Brown instruments making complete instrumentation the responsibility of one manufacturer. No wonder the list of concerns who now have or are installing complete Brown Instrumentation of continuous bleaching systems reads like a "Who's Who" of top textile producers.

Write for Catalog 9305. THE BROWN INSTRUMENT COMPANY, a division of Minneapolis-Honeywell Regulator Co., 4509 Wayne Avenue, Philadelphia 44, Pa. Offices in all principal cities.

Toronto, Canada . . . London, England . . . Stockholm, Sweden . . . Amsterdam, Holland

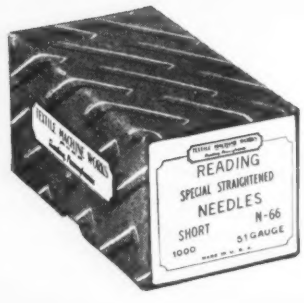
BROWN *Electronik* POTENTIOMETERS



"A tool is but the extension of a man's hand, and a machine is but a complex tool. And he that invents a machine augments the power of a man and the well-being of mankind."

Modern machines have made Americans the world's most efficient workers, and with every increase in efficiency, the worker has increased his share of the good things of life and the time in which to enjoy them. In Full-Fashioned Knitting, the READING Machine is the machine that insures the high standard of living of the thousands of skilled workers in the industry.

TEXTILE MACHINE WORKS · READING, PA.



Midnight Magic . . . The midnight magic of sheer full-fashioned stockings is the result of flawless needle performance. It's the kind of performance you get from TMW Fixture Drawn* Needles, the only needles made by an exclusive TMW patented process that holds the needles straight and true. Let us put your needle bars in shape for faster, more accurate, more profitable knitting.

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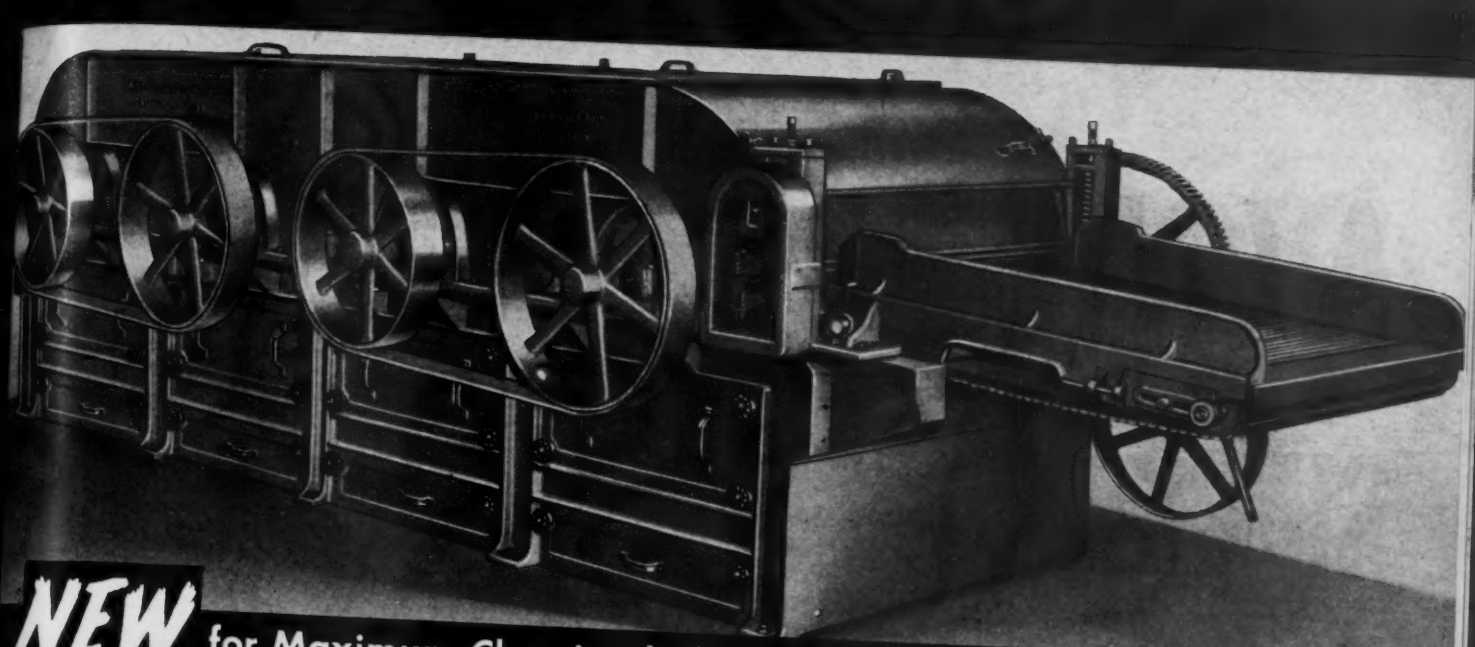

NEW for Maximum Cleaning before scouring, for non-breakage of Fibers

SARGENT'S

4 CYLINDER

WOOL OPENER

The SARGENT FOUR-CYLINDER WOOL OPENER *offers wool scourers, also woolen and worsted mill operators all the modern advantages they're enjoying from our Double Cylinder openers,* PLUS *a maximum of cleaning and opening of the fibers, thereby reducing scouring costs. Its many distinctive features include:*

- An adjustable nip for the feed rolls. For short fibers, rolls can be run close to the teeth of the first opening cylinder. For long fibers, rolls are set further away from cylinder, preserving staple lengths, preventing fiber breakage.
- Variable speed drive for the feed rolls and feed apron.
- "V" belt motor drives for the cylinders.
- Screens easily removed from side.
- Hinged covers on top expedite cleaning when required.
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- A large capacity with production up to 3000 lbs. of grease wool per hour.

Write us for complete details.

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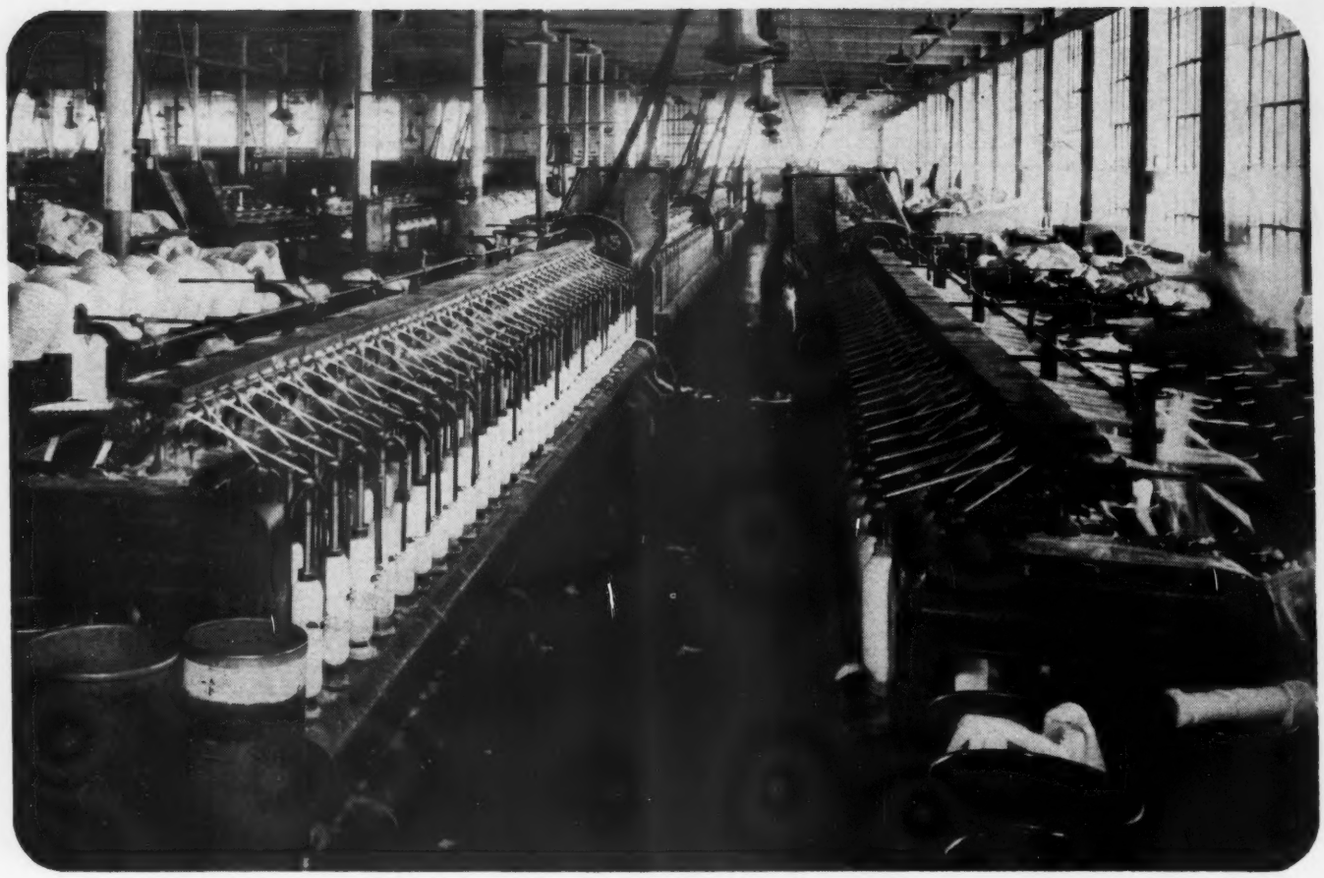
GRANITEVILLE, MASSACHUSETTS, U.S.A.

AVOID UNEVEN DRAFT
with
SINCLAIR NO-DRIP LUBRICANTS



IF UNEVEN draft and high yarn breakage are problems that seem to defy solution, look into your lubrication.

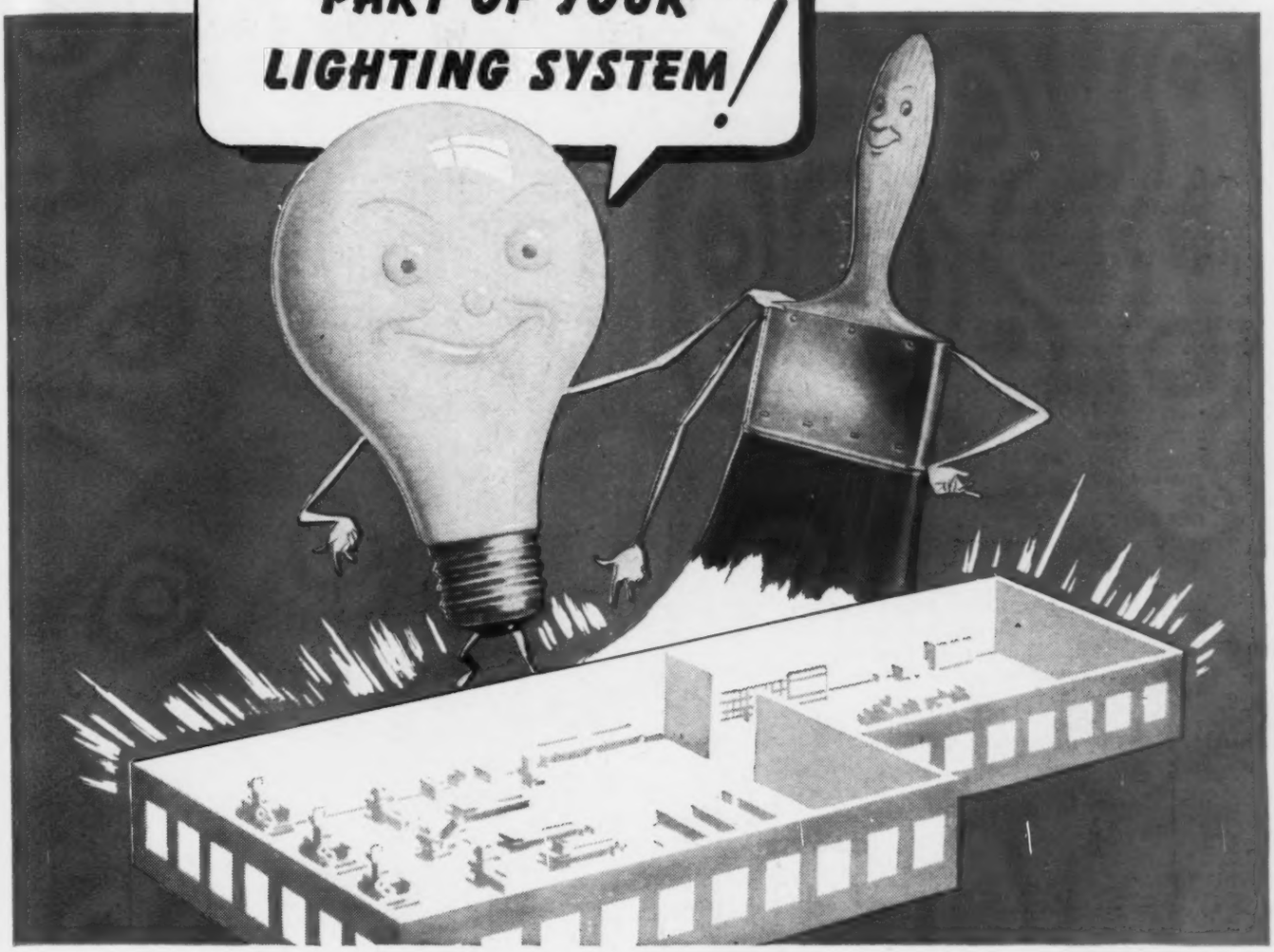
Faulty lubrication can produce these unwanted results. Besides being creep and drip-proof, a *correct* lubricant must flow evenly through the saddle bore or wick, must be made to minimize roll neck friction.

Sinclair NO-DRIP LUBRICANTS give you the correct combination of qualities. They're made in 5 grades—all smooth flowing, non-dripping, non-creeping. For clean, efficient top roll lubrication try Sinclair NO-DRIP LUBRICANTS.

SINCLAIR TEXTILE LUBRICANTS

FOR FULL INFORMATION OR LUBRICATION COUNSEL WRITE SINCLAIR REFINING COMPANY, 630 FIFTH AVENUE, NEW YORK 20, N. Y.

YES, SIR! PAINT IS PART OF YOUR LIGHTING SYSTEM!



THE TREND toward higher industrial lighting levels is a healthy and hopeful sign. Surveys show but one plant in 100 has enough light for the quick, easy, accurate seeing so necessary to fast, efficient production.

But in planning lighting installations, don't forget to include PAINT in your calculations. For paint, too, is part of your lighting system!

WHITE has far greater diffuse reflectivity than any other color. White-painted ceilings and walls, therefore, assure maximum efficiency from lighting fixtures. And, equally important, they help to distribute the light evenly throughout the working area and thereby banish those three arch-enemies of good seeing; glare, harsh shadows, and extreme brightness-contrasts.

For down-to-earth data on the relationship between Light, Paint and Seeing, let us send you a copy of "Light and Color in the Work-World." To get your copy, just fill out and mail us this coupon TODAY.

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I'd like to know more about the partnership of light and white paint. Send me a copy of "Light and Color in the Work-World."

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Better Piping . . . the Easier Way
Crane Supplies Everything

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RESPONSIBILITY
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Ask piping men in any field. They all have the same reasons for standardizing on Crane Equipment. Makes the whole job easier, they say, from design to erection to maintenance work.

Getting everything from one source means simplified specifying and buying. And getting it from Crane assures top quality in all materials for any piping installation.

Naturally, the easier way to better piping is to have Crane supply everything. For only the Crane line gives you this 3-way advantage:

ONE SOURCE OF SUPPLY giving you the world's most complete selection of valves, fittings, pipe, accessories and fabricated piping—in brass, iron, and steel—for all power, process, and general service applications.

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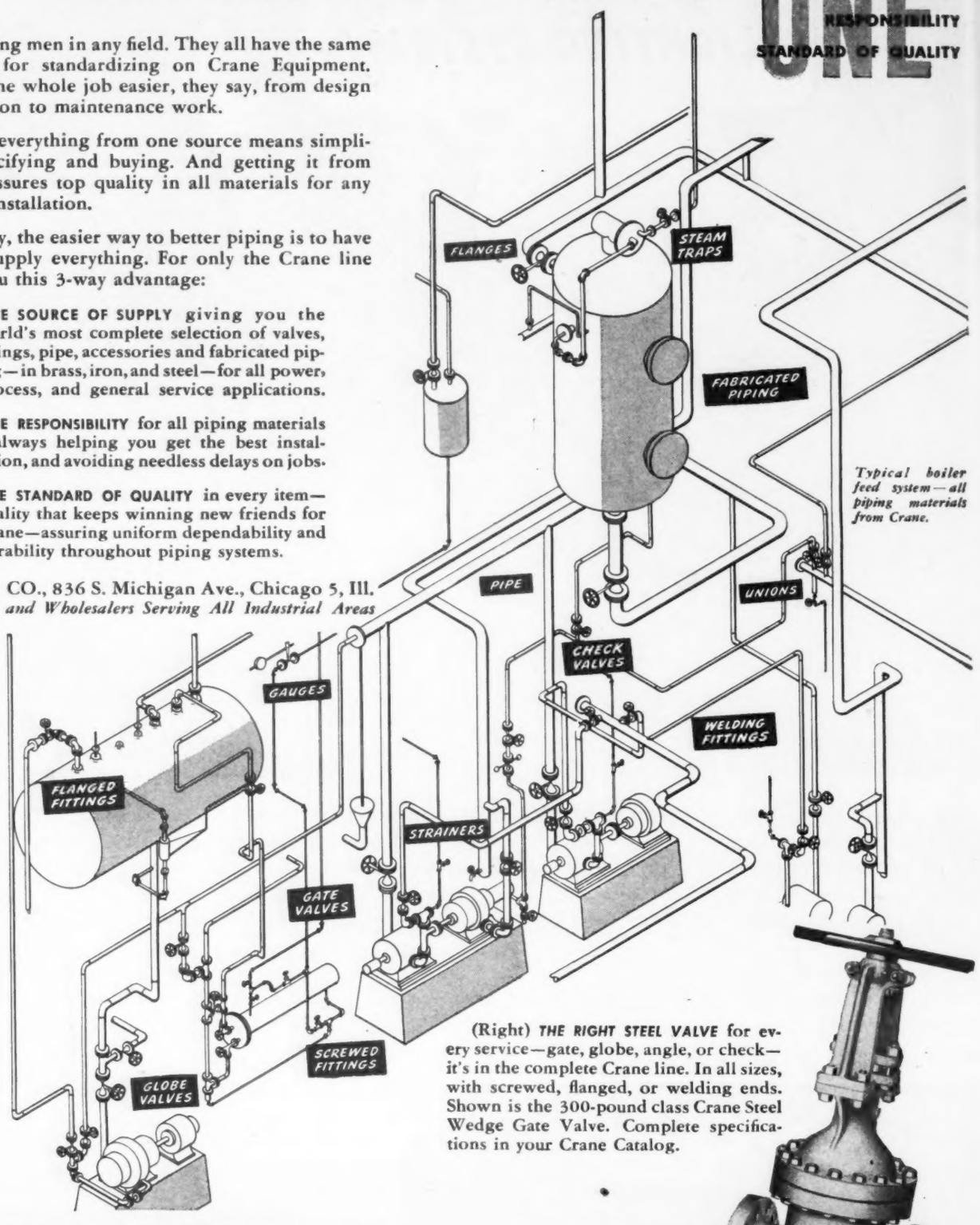
ONE STANDARD OF QUALITY in every item—quality that keeps winning new friends for Crane—assuring uniform dependability and durability throughout piping systems.

CRANE CO., 836 S. Michigan Ave., Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas



Typical boiler feed system—all piping materials from Crane.

(Right) ***THE RIGHT STEEL VALVE*** for every service—gate, globe, angle, or check—it's in the complete Crane line. In all sizes, with screwed, flanged, or welding ends. Shown is the 300-pound class Crane Steel Wedge Gate Valve. Complete specifications in your Crane Catalog.

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CRANE

FOR EVERY PIPING SYSTEM

Magnesium Tricot Warp Beams

CROWD MORE FABRIC INTO AN HOUR

American Magnesium tricot warp beams are timesavers. Their extremely low weight speeds up the warping operation. Their permanent dimensional accuracy reduces vibration... lowers maintenance cost.

Because of the high strength and stiffness of magnesium warp beams, they are able to withstand the tremendous forces exerted by modern yarns. More yards per hour of any yarn roll from American Magnesium tricot warp beams.

For a quotation on your tricot warp beam requirements, write Aluminum Company of America, Sales Agent for American Magnesium products, 1705 Gulf Bldg., Pittsburgh 19, Pennsylvania.

GET THIS BOOK! The demand for higher-quality fabrics at lower cost is causing designers of textile machinery to turn more and more to the use of magnesium. Designers will find the information contained in this book very helpful.

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AMERICAN MAGNESIUM CORPORATION
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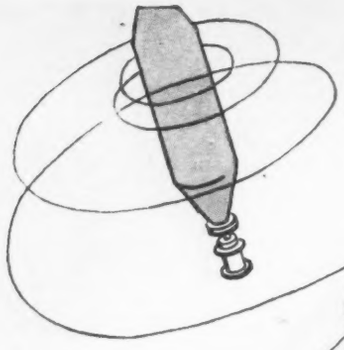

Less wear
Greater efficiency
Lower maintenance costs
Reduced fire hazard

when the Gulf Lubrication Engineer is *"in the picture"—*

The Gulf Lubrication Engineer in the picture (left) is checking loom lubrication in a prominent New England mill.

GULF LUBRICATION ENGINEERS are specialists in scientific textile mill lubrication. That's why they are "in the picture" in a majority of leading mills, co-operating closely with production and maintenance men to attain better all-round efficiency.

By recommending the proper oils and greases for every moving part, and the best methods of application, Gulf Lubrication Engineers help to lessen wear, reduce fire hazard, improve output, and cut maintenance and power costs.

Call in a Gulf Lubrication Engineer today and let his knowledge and experience work for you on your maintenance problems. His helpful counsel—and Gulf's complete line of more than 400 quality oils and greases—are available to you through 1200 warehouses located in 30 states from Maine to New Mexico. Write, wire, or phone your nearest Gulf office.

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ABILITY to carry heavy loads in limited space is an attribute of the sleeve bearing. Typical of Bunting Bearings used for such applications are the crankshaft main, connecting rod and piston pin bearings of internal combustion engines. On your bearing problems, consult Bunting engineers. The Bunting Brass & Bronze Company, Toledo 9, Ohio. Branches in Principal Cities.

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52

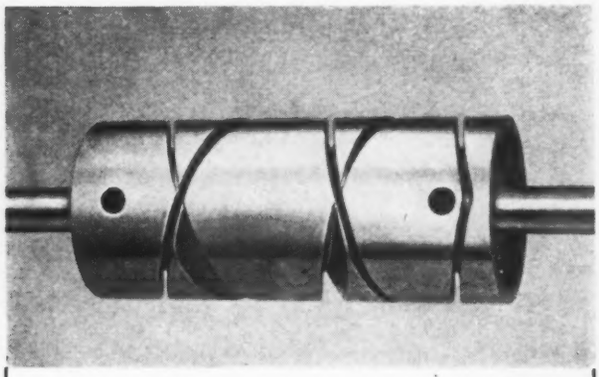
WEAR-RESISTING METAL ROLL

FOR CONING SPUN RAYON YARN

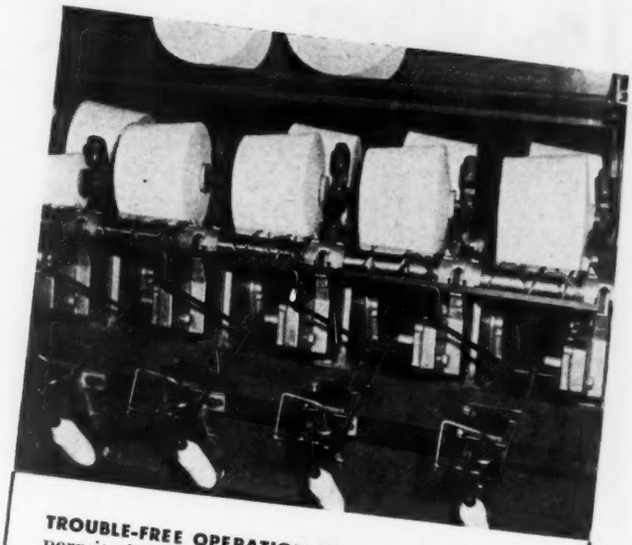
The very same advantages enjoyed by the hundreds of mills coning cotton yarn on Roto-Coners* are available to spinners of synthetic staple yarn.

Roto-Coners* equipped with wear-resisting metal rolls are giving a number of mills on spun rayon the higher production, lower maintenance cost and superior quality of package which result principally from the exclusive Universal design of Rotary Traverse.

Mills winding spun rayon are invited to write for Bulletin 144. All the advantages it describes for cotton yarn are equally true for spun rayon. Universal Winding Company, Providence, Boston, Philadelphia, Charlotte, Utica, Atlanta, Chicago, Los Angeles, Montreal, Hamilton.

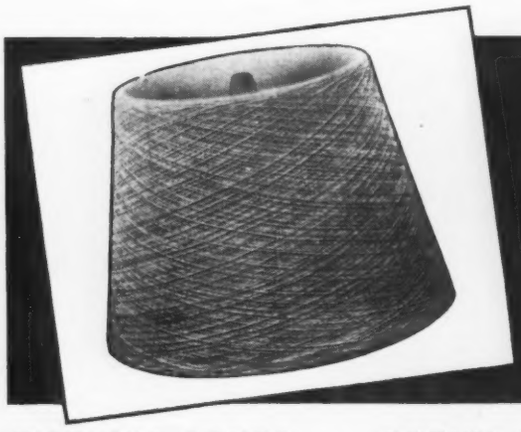


ROTARY TRAVERSE made of wear-resisting metal. Roll drives package, grooves guide yarn. No slip drum to nip yarn. Groove arrangement shown builds proper shape of knitting cone; quick reversal of yarn at end of traverse avoids underwinds and cobwebs.



TROUBLE-FREE OPERATION. Use of Rotary Traverse permits high winding speed — 550 YPM for paper coning. Elimination of cams and other fast-wearing reciprocating parts helps give minimum maintenance cost — averaging ½ of 1% per year on investment.

23.6.11



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Open-Wind Cones for Knitting

WARPING CONES • DYEING PACKAGES • PARALLEL TUBES FOR TWISTING

TEXTILE WORLD

NOVEMBER, 1946 : VOL. 96 : NO. 11

1946 INDUSTRY *Improvement* PROGRAMS Estimated to Total $298,500,000

HIGHLIGHTS: *Commitments for renovation, modernization, and expansion are more than triple annual prewar expenditure—Big spurt started last quarter of 1945—Cotton mills lead in volume, synthetic-fiber mills in proportion—Actual achievements that can be realized depend upon deliveries—Much emphasis is on general industrial equipment.*

THE TEXTILE INDUSTRY this year is giving evidence that it intends to develop extensive improvement in its productive facilities. For the entire year 1946, its commitments for renovation, modernization, and expansion are estimated to total $298,500,000. This impressive figure should be compared with an actual expenditure in 1939, reported by the Census Bureau of the Department of Commerce, of only $87,670,000.

The estimate for 1946 is based on expenditures by individual mills as reported from January through October in the News About Mills department of TEXTILE WORLD, with partial pro-rata projection made for the remainder of the year. Included are 20% of the plans for new plants by the synthetic-fiber producers, who so far in 1946 have initiated programs totaling about $125,000,000. The 20% of this over-all figure, which represents the strictly textile portion of the expenditures, is one item which is not projected beyond October. The total represents plans for construction of new mills, additions to present plants, remodeling and renovation of present plants, and purchase of new equipment for both increased capacity and replacement of old equipment. Also included are expenditures for air-conditioning, humidification, lighting, handling equipment, power plants, employee welfare, and improvements and extensions to mill villages.

SUPPORTS 1944 ESTIMATE. This study not only lends considerable support to TEXTILE WORLD's 1944 estimate of the industry's postwar plans for improvement, but seems to place it in rather a conservative light. At that time, a large and representative group of mills in this country were asked what they intended to buy in the way of major plant and equipment during the first five postwar years. When the figures obtained were projected, in proper ratio, over the entire industry, the results indicated that the total expenditures would amount to $640,972,000. In addition, the mill men who told TEXTILE WORLD about their plans in 1944 made it clear that they would make their purchases as fast as deliveries could be made. The fact that during 1946 alone they are earmarking

ANNUAL MILL CHECK-UP SECTION

ANNUAL
MILL CHECK-UP
SECTION

in definite commitments almost half their estimated probable long-range expenditures demonstrates the seriousness of their intentions.

New plants and additions are being erected at an unprecendented rate in every branch of the industry, even though much construction is being delayed by government restrictions. In a great many cases, the new mills which are being built will replace antiquated plants no longer adaptable to the latest methods of production. The desire for modern air conditioning and materials handling is one factor apparently stimulating the desire for new buildings. Quite frequently, too, new construction is designed to provide facilities for expansion into new phases of production. This trend is evident particularly among some of the larger companies (though not entirely restricted to them) which are planning highly integrated operations.

SYNTHETICS. The activity of the synthetic-fiber producers is very significant in its relatively vast extent. The high, and apparently increasing, demand for synthetic fibers has led producers to embark on far the most extensive program of expansion in their history.

Purchases of new equipment, like construction of new buildings and additions, have been limited by problems of supply. The fact that mills have been unable to obtain all of the equipment they want as soon as they want it should, however, have little effect on the amount they will buy in the long run. The pressure on war-battered equipment has not decreased appreciably, and the need for every possible cost-reducing instrument of production has been accentuated by the rising costs of production.

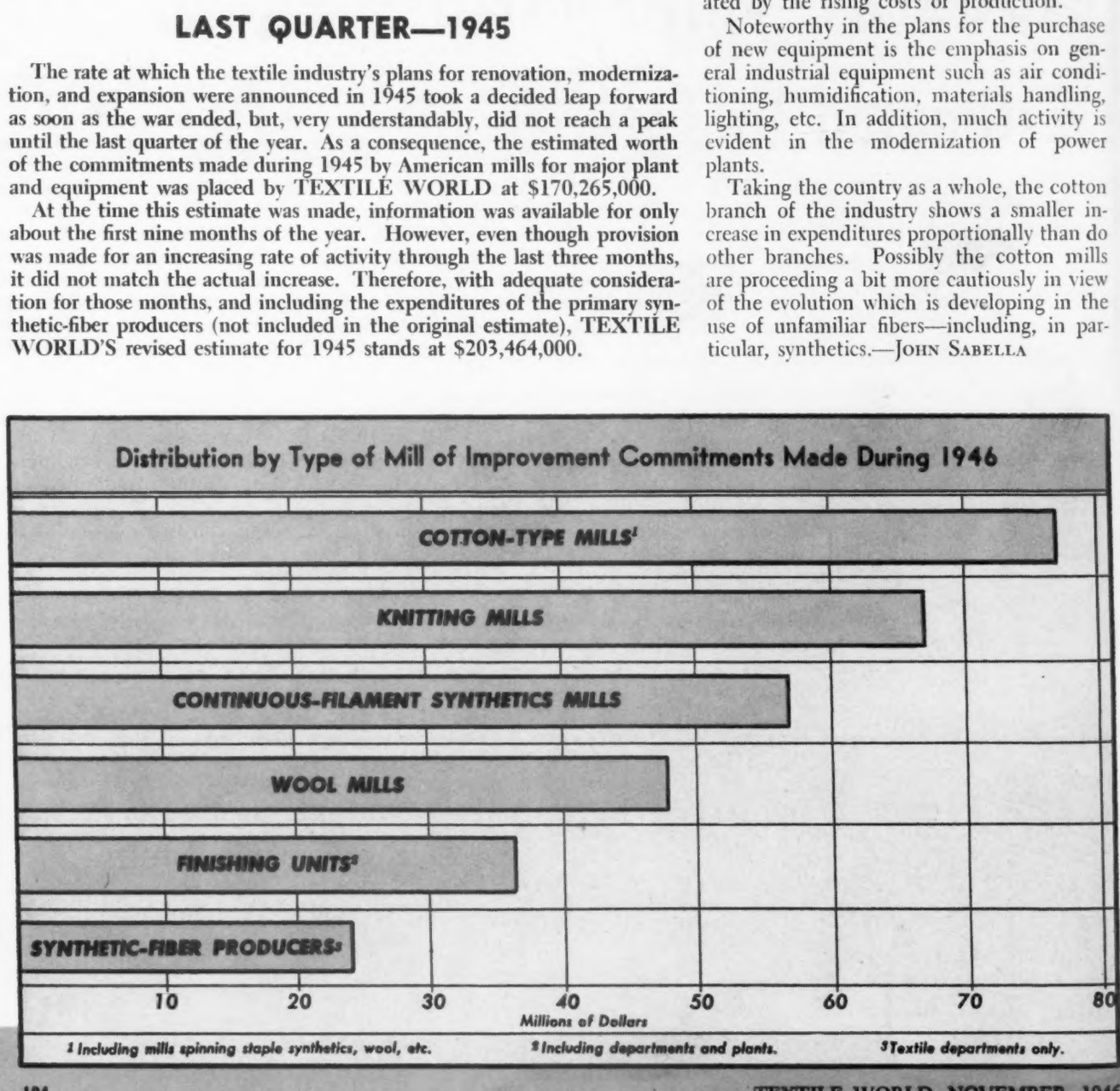
Noteworthy in the plans for the purchase of new equipment is the emphasis on general industrial equipment such as air conditioning, humidification, materials handling, lighting, etc. In addition, much activity is evident in the modernization of power plants.

Taking the country as a whole, the cotton branch of the industry shows a smaller increase in expenditures proportionally than do other branches. Possibly the cotton mills are proceeding a bit more cautiously in view of the evolution which is developing in the use of unfamiliar fibers—including, in particular, synthetics.—JOHN SABELLA

LAST QUARTER—1945

The rate at which the textile industry's plans for renovation, modernization, and expansion were announced in 1945 took a decided leap forward as soon as the war ended, but, very understandably, did not reach a peak until the last quarter of the year. As a consequence, the estimated worth of the commitments made during 1945 by American mills for major plant and equipment was placed by TEXTILE WORLD at $170,265,000.

At the time this estimate was made, information was available for only about the first nine months of the year. However, even though provision was made for an increasing rate of activity through the last three months, it did not match the actual increase. Therefore, with adequate consideration for those months, and including the expenditures of the primary synthetic-fiber producers (not included in the original estimate), TEXTILE WORLD'S revised estimate for 1945 stands at $203,464,000.



SPECIFIC PLANS Reveal Progressiveness

HIGHLIGHTS: *Case studies provide typical examples of modernization and expansion programs under way—Uncertainty marks predictions of completion dates of most projects — Many long-range programs have been announced only in part.*

FOR WHAT PRODUCTS AND SERVICES will the textile industry spend the $298,500,000 for which it is committing itself in 1946? The best way to answer such a question is to present typical examples of the modernization and expansion programs which are now planned or under way. The case studies presented in this article are based upon information provided by the mills themselves; most of them appeared in abbreviated form in the News About Mills section of TEXTILE WORLD.

One factor stressed by most of the mills whose projects are described in this article is the uncertainty and frequently dragging slowness with which any program can be carried forward. When expected completion dates of projects were given, it was customary to add "I hope" or a similar phrase. Delays in delivery of building materials cause many headaches; one manufacturer reported that inability to obtain $3,000 worth of brick has stymied the remainder of his $150,000 program. Slow delivery of machinery and equipment was cited as a second cause for failure of plans to materialize as quickly as desired; but real complaints on this score were negligible, apparently due to realization that equipment builders are producing machines at top speed but are swamped with orders. One cotton mill man sadly stated that some machines which he has on order are promised for delivery in 1950.

In spite of these difficulties, there as yet appears to be no decrease in the number or size of projected programs. Too, many textile manufacturers admit that their in-progress plans are but a part of long-range projects and that succeeding steps will be announced and undertaken as events progress to the point where more rapid completions can be foreseen.

Cotton Mills Want Automatic Machinery

Beaumont Mfg. Co., Spartanburg, S. C., has in progress a $500,000 expansion project which will add 300 new looms to the mill's facilities. One hundred new 40-in. X-P Draper looms have already been installed, and 200 new X-2 looms will be installed in the immediate future. Additional building space was obtained by removing the twisters which formed part of the company's expanded war equipment. Evaporative air-conditioning may be installed in the new weave room later; Amco humidifiers are now installed. The four Saco-Lowell slashers which serve the new weave room have been rebuilt into high-speed, 3-cylinder units with individual drives and automatic controls, such as moisture control. Exhaust hoods over slashers are of the new stainless-steel type. Mechanized Cleveland Tramrails handle warper and slasher beams.

It is planned also that the electric-trolley-conveyor system used to haul cloth rolls from weaving to cloth departments will be extended and used to serve the new weave room. (See TEXTILE WORLD, September, 1946, p. 125.) The company is also endeavoring to make the trolley housing fully automatic during the unloading operation.

A new air-compressor room to feed the humidity lines in the new weave room has been completed. Two Pennsylvania and two Gardner-Denver compressors furnish the charge of air necessary for the humidity system.

Colonial Mills, Inc., is spending more than $2,600,000 in a large expansion and modernization program consisting of construction of a new finishing plant at Clarksville, Va., and improvements to its operating subsidiaries at Robbins, Red Springs, and Rockingham, N. C. Over $1,500,000 will be spent for plant and equipment in the finishing project, which is expected to be complete about Jan. 1. Improvements to Mid-State Cloth Mills, Red Springs, are expected to be complete early in 1947. At Hannah-Pickett Mills, Rockingham, more than $100,000 has been spent on improvements to the village and other facilities.

Joanna Cotton Mills, Goldville, S. C., producer of drapery and shade cloths, is expending more than $2,000,000 for machinery, buildings, and employee-housing improvements. A mill addition of 90,000 sq. ft., which has been completed, is a four-storied brick-and-steel structure to be amply supplied with glass blocks. Daniels Construction Co., Greenville, S. C., built the addition; it was engineered by Lockwood Greene Engineers, Inc., Spartanburg, S. C.

New machinery installed in the mill addition thus far: Saco-Lowell openers, pickers, and 110 40-inch cards; 46 10x5 Saco-Lowell J-3 roving frames; 10 Saco-Lowell lap winders; 180 deliveries of five-roll drawing; and 5 Whitin-Schweiter winders. Barber-Colman automatic spoolers, already a part of the mill's production facilities, have been lengthened by 20 spindles each.

All spinning spindles will be equipped with the new Joanna aluminum adapter (see Textile Equipment News). New spinning frames will be installed some time after January 1, 1947. Present production plans call for 48 Saco-Lowell 276-spindle, 4-in. gage frames, equipped with the Shaw long-draft system.

More than 50 new employee houses, already begun, will be of modern brick-tile construction and will contain three bedrooms, living room, dining room, kitchen, bath, and back porch. Laundry equipment and electric hot-water systems will be installed in each home.

Pacific Mills, Boston, is vigorously pursuing a modernization program begun about five years ago with the object of replacing all machinery and equipment of less-efficient design and productive capacity with the most advanced units available. During the war, deliveries were seriously delayed; but lately it has been possible to install some machinery pur-

Rocky Mount Mills, Rocky Mount, N. C., cotton yarn mill, has completed a $60,000 brick addition to house new carding and spinning equipment. New machinery installed consisted of 41 Whitin cards and 23 Whitin spinning frames; auxiliary equipment included a Bahnson air-changing and humidifying system and a 300-ft. conveyor for handling spinning bobbins.

chased before the end of hostilities. At the close of 1945, the company had contracted for the purchase of materials, buildings, and machinery totaling $4,870,000; in 1945, $2,190,000 was invested in new equipment. The amounts expended in 1946 and 1947 will depend on business conditions.

Recent developments have been the acquisition of two plants and the breaking ground for a third. Early last year, a building in Carrboro, N. C., was purchased and converted to manufacture woolen and worsted fabrics. Later Rhodiss (N. C.) Cotton Mills was acquired and operation continued; this is near the company's Lyman, S. C., plant, where fabrics are finished. Construction has proceeded actively on a medium-sized woolen and worsted unit at Halifax, Va., a new one-story brick mill designed for the most efficient production and scheduled to contain 3,600 spindles and 108 looms. At its Granby plant, Columbia, S. C., a $200,000 air-conditioning installation was completed recently, rounding out a program started some years back when similar systems were provided for other units of the company.

United Merchants and Manufacturers, Inc., is pursuing a program of modernization in its operating units; expansion of capacity will be relatively small but will, to some extent, replace facilities lost last July in the Langley Mills fire.

Associated Textiles of Canada has already completed a new one-story, air-conditioned weave room of latest design and is, at present, completing buildings to house preparatory and finishing equipment. At Ashland Mills, Jewett City, Conn., some replacement of looms and improvements in preparatory machinery are anticipated. At Bath, S. C., new preparatory machinery is to be installed and dyeing facilities lost at Langley Mills are being replaced.

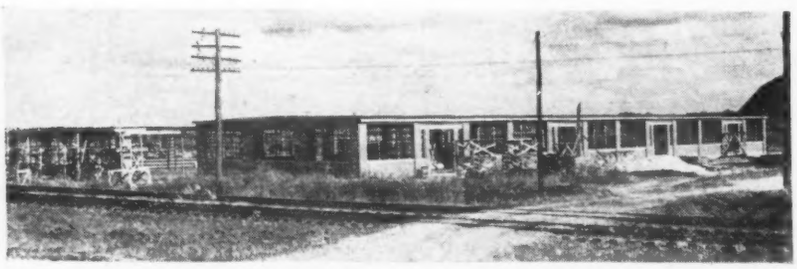
Modernization of machinery is being undertaken at Seminole Mills, Clearwater, S. C., and additional warehouse space provided. Clearwater Mfg. Co. has completed a new machine shop and is planning new construction to house a coating department and provide additional warehouse space. New lighting and humidification are anticipated for Arkwright Mills, Fall River, Mass.

Modernization of buildings and machinery is planned for Union-Buffalo Mills, Union, S. C.; new spinning equipment is now arriving at the mill. At Old Fort, N. C., two new plants are under construction: one is a one-story, air-conditioned, rayon-finishing plant; the other is a windowless, air-conditioned knitting mill.

Knitting Mills Like Air Conditioning

Chadbourn Hosiery Mills, Charlotte, N. C., will spend more than $2,000,000 in an expansion and replacement program. Finishing production at the Larkwood Mill unit in Charlotte will be greatly expanded by the new addition now being erected, and new knitting equipment will be added to the Shenandoah, Midland, and Siler City mills, in addition to the establishment of a large new full-fashioned mill at Wilmington, N. C. In the new addition at Larkwood, evaporative air conditioning may be considered as a possibility, as well as new fluorescent lighting, conveyor-fed handling, and other improvements. The addition will be completed sometime in 1947. A stoker-fed, fully automatic boiler room has already been completed.

Machinery replacement and modernization in the large number of mills recently purchased by Chadbourn are expected to continue for some time.



Gastonia Full-Fashioned Mill, Gastonia, N. C., has partially completed a $500,000 expansion program in which plant capacity and number of employees will be trebled by the addition of new full-fashioned machines, 400-needle equipment, and finishing machinery. Present production is 2,500 pairs per week of nylon, silk, and rayon hosiery. Only new 51-gage machines are as yet installed; circular knitting machines will be purchased in the future. Some of the new machines to be added are: 10 new Reading 51-gage machines, 100 new Scott & Williams 400-needle seamless machines, 13 seamers, 13 loopers, and complementary finishing and dyeing equipment.

Mock, Judson, Voehringer Co., Greensboro, N. C., is planning a long-range expansion and improvement program to increase hosiery production about 50% over prewar output; cost will be approximately $1,500,000. New machinery on order includes one battery each of latest-type redraws, twisters, and coners; latest sizing and throwing equipment is to be installed, including a unit of 24 sizing machines. The plant will add new full-fashioned hosiery machines as soon as they are obtainable, and some are expected to be received before the close of 1946. Most present coarse-gage full-fashioned machines are being converted to a finer gage.

New inspection machines on order are expected to handle hosiery twice as speedily as those now in use.

A separate 20x70 ft. building to house

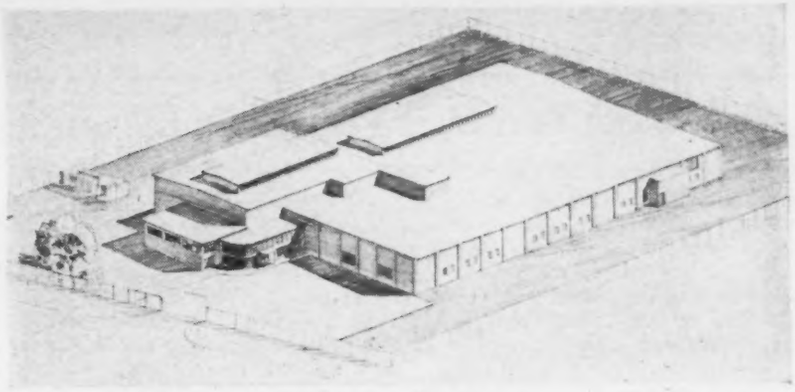
an air-conditioning plant for the factory is nearing completion.

The Greensboro plant now employs about 800 people, but expects to require 1,200 when the long-range program has been completed.

Munsingwear, Inc. has completed a new $1,000,000 seamless-hosiery plant at Rogers, Ark. (see TEXTILE WORLD, Sept., 1946, p. 151). Of the amount expended, $800,000 was for machinery and equipment, including 392 Scott & Williams 400-needle machines. About 150 employees will be used. No finishing machinery was installed; plans call for finishing the mill's output at the company's plant at Des Moines, Iowa. Annual production at the Rogers plant is expected to be 2,500,000 pairs of nylon seamless hose.

Propper-McCallum Hosiery Co., Inc., is building a new $1,000,000 plant at Florence, Mass., to be one story high and 138x215 ft. It will be air conditioned throughout, with automatic temperature and humidity control, insulated roof, and fluorescent lighting. Fifty-two of the largest full-fashioned knitting machines will be installed, and the plant will be an addition to the company's present facilities. Lockwood Greene Engineers, Inc., have charge of the plans.

Shelton Hosiery Mills, Inc., is pushing the construction of a new plant at Shelton, Conn., with estimated completion for service in the spring of 1947. It is a two-story building, 100x150 ft., and will be equipped with the latest types of knitting machinery for hosiery production, furnished by Scott & Williams, Inc., and The Hemphill Co. The plant is to be arranged for economical handling of material and product and to give employees the most modern working conditions.



Duplan Corp. has begun two projects, totalling about $800,000, which will increase the company's nylon-throwing capacity by 35% and rayon-staple weaving capacity by 25%. The nylon-processing plant at Winston-Salem, N. C., (see cover) is reported to cost $350,000 including equipment and will employ approximately 150 persons. At Lincolnton, N. C., a $450,000 addition to the present spinning mill consists of a 105x275-ft. two-story building which will house 200 new looms and provide floor space for additional cards, twisters, and other preparatory machinery.

Spalding Knitting Mills, Griffin, Ga., is now engaged in an expansion and improvement program that involves an expenditure of approximately $100,000. In its American Throwing Co. unit, it is completing a new dye house, bleaching unit, and boiler room. In the knitting mill, a Carrier refrigerated-air-conditioning system, costing about $50,000, is being installed. It is reported that when this installation is completed, Spalding will be the largest seamless-hosiery knitting mill in the United States that is completely air-conditioned.

Synthetics Mills Make Long Range Plans

Hess, Goldsmith & Co., Inc., rayon weavers and converters, have begun a threefold plan of expansion and modernization with a contemplated outlay of $1,750,000.

At the company's Atwater Div., Plymouth, Pa., a recently completed 30,000 sq. ft. addition, costing $500,000 for plant and equipment, is designed to offer facilities for production of high-quality nylon hosiery yarns. The new addition is air conditioned throughout; materials flow has been planned to permit maximum use of conveying equipment, with no back tracking at any point; and fluorescent lighting is used in all departments, along with scientific color schemes.

The twisting department has been more than doubled in capacity by addition of new double-deck twisters. Sizing is done in three separate, identical rooms to permit specialized functioning; coning is performed in the windowless ground floor. An employees' cafeteria has been added. New power-distribution equipment includes panels in all departments and a 2,500-amp. switchboard; major power lines are located in under-floor trenches.

Further improvements planned for the Atwater Div. include installation of individual-motor drives on the few remaining group-drive twisters, a new testing laboratory, and a new machine shop.

At Pomona, Calif., a newly organized subsidiary has built a modern, one-story concrete building to house a new $450,000 tricot plant. At Wilkes-Barre, Pa., the company's two weaving plants will be consolidated at a cost of $800,000 for buildings and equipment. A modern, windowless, completely air-conditioned building will be erected; high-speed automatic looms are being installed.

Hoosac Mills is carrying out extensive improvements in equipment on a schedule involving its mills at New Bedford and North Adams, Mass. For the former plant, about 400 Draper X-2 looms have been purchased and many have been installed; later it is expected that approximately 800 more looms will be added at an outlay of about $650,000.

The North Adams plant has installed approximately $125,000 worth of new machinery. Plans are maturing for rebuilding all looms. Universal automatic-winding machinery has been placed in this plant, as has Johnson slashing machinery, and some further preparatory equipment.

Putnam Mills Corp., Putnam, Conn., has purchased a site on which it plans to erect a modern throwing installation to be equipped with a full set of Atwood twisters and redraws, all motor-driven. Fluorescent lighting will be provided. The brick building is to contain about 70,000 sq. ft. of floor space and will, at first, be one story high but will be designed to enable a second story to be added. The company hopes to have the enlarged plant in operation some time in 1947. Included in the project is a new boiler house to be equipped with one boiler especially for process steam and heating service. In the company's present building, new offices are now in the process of installation and are to be equipped with air conditioning and fluorescent lighting.

Revolution Cotton Mills, Greensboro, N. C., is now constructing a new one-story spinning and weaving building for synthetic fabrics. The unit will contain about 90,000 sq. ft. of floor space, will be entirely modern and air-conditioned, and will contain about 7,000 spindles and 160 looms, all new. Later increases are planned to enlarge the plant to 20,000 spindles and approximately 500 looms. About 150 new employees will be required at first and 450 to 500 when the project is finally completed.

Wool Branch Buys Much Preparatory Equipment

Clinton Mills, Inc., Clinton, Mass., a branch of The Bell Co., is spending about $400,000 on buildings and about $350,000 on machinery and equipment. A boiler house, a top dyehouse, and a blending building are being built; parts of two existing buildings are being renovated. The new buildings are of concrete, steel-frame, and brick construction with gypsum-plank roofs; glass block is being used in a large way.

In the boilerhouse, two Riley-Jones 500-hp. steam-generating units are to be installed, to be built with underfeed stokers and all necessary auxiliary equipment. New dyeing equipment will consist of 12 to 15 stainless-steel, special-built, Hunter top-dyeing machines; five stainless-steel Hunter piece-dyeing machines, two Societe Alsacienne Vigoureux printing machines with steamers, four backwashers, a scutcher, squeeze rolls, and possibly a cloth drier. New blending equipment will be four Societe Alsacienne Melangeurs with necessary preparatory and finishing gill boxes.

Principal reason for the expansion is to bring dyeing operations under company control. On a single-shift basis, about 50 additional employees will be required. The new unit should be in operation in 1947.

Cotwool Mfg., Co., Lisbon Center, Me., has commissioned A. J. Harriman, Auburn, Me., to prepare plans and specifications for a 36x37-ft., one-story steam-boiler plant to cost about $100,000. This plan includes a new 500-hp., oil-fired boiler to operate at 100 psi.; a steel stack; and four fuel-oil storage tanks of 12,500-gal. capacity each. Installation will be at the Farnsworth Mill, and Babcock & Wilcox will furnish the boiler. At the company's plant in Lewiston, Me., a new tower will be built, provision will be made for new facilities for the comfort of employees, and a new air-conditioned laboratory will be constructed, all totaling about a $35,000 expenditure.

Deering, Milliken & Co., Inc., is nearing completion of two new worsted mills which will cost $3,115,000 with equipment. At McCormick, S. C., a new spinning plant of 20,000 spindles will process worsted tops on Whitin cotton-system machinery. At Johnston, S. C., a new weaving mill will be equipped with 144 C&K box looms. Both plants will be windowless, air-conditioned, concrete structures; each will have a cafeteria. Homes for supervisory employees are being built at both locations. Operations should begin about January 1, 1947.

Hargo Woolen Mills, Inc., has leased about 25,000 sq. ft. of floor space to produce men's and women's wear fabrics in a former manufacturing building in New Bedford, Mass. The building, formerly a part of Dartmouth Mill's weave shed, has sawtooth skylighting and has column spacing about 30 ft. Two 60x72-in. cards, four 144-spindle spinning frames, and a mixing picker are being installed, all made by Davis & Furber. In December, it is expected that 12 W-3 C&K looms (82-in. automatic) will be added. On order for later delivery are two more sets of cards, 6 frames, and 12 more looms, all like the foregoing. Building work, including electrical wiring and alterations, will cost about $5,000; and present machinery commitments for current use are in the vicinity of $150,000. Additional production and auxiliary equipment will include fluorescent lighting, high-speed jack spoolers, quill winders, and other machinery. About 35 workers will be employed. It is expected that operations will be well under way by Dec. 1, 1946.

Strong, Hewat & Co., Inc., North Adams, Mass., manufacturer of suitings and over-coatings, is building a new plant for making woolen yarns. In addition to machinery now in operation, it is planned to install three new 60-in. Whitin cards and six new Whitin wool-spinning frames. Present machinery will be reconditioned and modernized, and the total cost of mechanical improvements will approximate $150,000. The new building will have 50,000 sq. ft. of floor space and is to cost about $350,000, including humidification. It is expected that production will begin about March or April, 1947.

Finishers Modernize and Expand

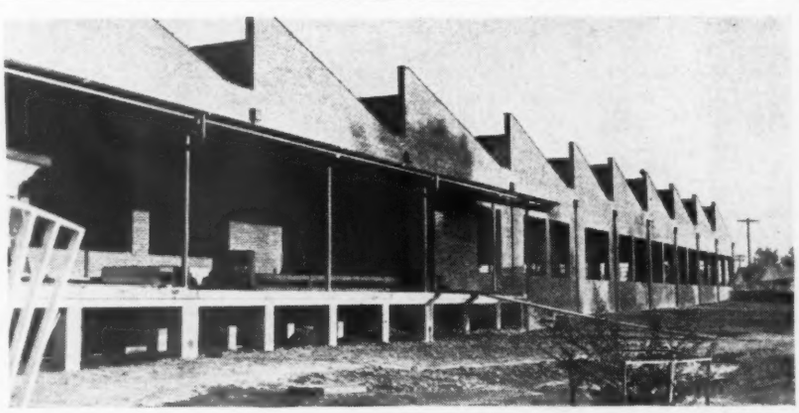
Pepperell Mfg. Co., is now completing a new bleachery at its Opelika, Ala., plant. The building consists of a one-story, monitored front section for dyeing and bleaching and a two-story *L* wing that houses offices and warehouses on the first floor and sewing, inspecting, and packing facilities on the second floor. The new unit contains 158,000 sq. ft. of floor space and represents an expenditure of $2,000,000 for building and equipment. Dyeing and bleaching machinery was built by Morrison Machine Co.

Included in the new set-up is a boiler plant equipped with two Babcock & Wilcox horizontal boilers with a capacity of 40,000 lb. per hr. each. The boiler furnaces will be fed through pulverizers from a coal silo.

The bleachery will be in operation early in 1947 and will employ approximately 350 workers.

Sayles Finishing Plants, Inc., Glenlyon Printing Div., Phillipsdale, R. I., is expending about $300,000 in modernization. The program includes a Riley steam boiler, capacity 60,000 lb. per hour at 200 psi., to operate on either fuel oil or pulverized coal; an Allis-Chalmers steam turbo-generator unit of about 1,000 kw. rating, non-condensing type; and a new Morrison Sanforizing unit. At the Saylesville Bleachery, Saylesville, R. I., the company is planning an expansion program totaling about $750,000, to be carried forward in 1947 and to involve power equipment and finishing machinery.

Thies Dyeing Mills., West Warwick, R. I., is making a three-story 50x60-ft. brick-and-steel addition to the present establishment. Six new Universal winders, two or three Foster winders, and a 3,000-lb. capacity Otis electric elevator are to be installed. Fluorescent lighting is to be provided. E. J. Hollen, Providence, R. I., is general contractor.



Sidney Blumenthal & Co. has under way a $160,000 brick addition to its Caramount Div., Rocky Mount, N. C., which will be used to house warp-preparation and weaving machinery; 12 to 14 new warpers will be installed.

ANNUAL
MILL CHECK-UP
SECTION

EXPECT GREAT SAVINGS From New, Improved Equipment

HIGHLIGHTS: *Replacement of worn-out machinery rather than reduction in operating costs is motivation for most modernization, but savings are expected—Original cost regained in one year by mill replacing four-process roving with two-process long-draft—Woolen mills estimate five to ten years required to pay for new spinning frames—New seamless-hosiery machines expected to make large returns each year—Most finishing equipment expected to pay for itself in five years.*

THE TEXTILE INDUSTRY is in the midst of its greatest buying era ever. It is attempting to catch up on modernization and expansion programs which were curtailed because of the war, it is rehabilitating and rebuilding equipment and machinery which have operated for several years with a minimum of maintenance, and it is trying to move a step ahead in order to prepare for the return to a buyers' market. Most mill men realize that their old machinery is expensive to operate and that it will be more expensive, profit-wise, when competition returns; but most of them do not know how much could be saved in reduced costs by modernization.

In an effort to find out just how much it is costing to operate machinery which is susceptible of replacement by better machinery, TEXTILE WORLD asked 2,300 mills, representing all branches of the textile industry, to estimate the savings which they would enjoy if they installed the latest machinery and other equipment and employed the most up-to-date supplies. We asked 225 equipment builders what savings would result to mills installing their latest, most-improved products, assuming an average age and obsolescence of equipment now in mills.

The replies, except for a very few, indicate that little figuring has been done thus far on savings to be realized on new installations. The principal motivation behind modernization appears to be the decrepit condition of present equipment rather than the sole idea of reducing manufacturing costs. As one mill man said, "My old machines are falling apart; I have to buy new ones." Several mills stated that new machinery would not reduce their costs, and one went so far as to say that replacement would increase its cost.

COTTON MILLS. In the cotton branch of the industry, mills planning to install new high-speed looms estimated that they would save $110 to $155 per loom per year in manufacturing costs and would pay for the machines in six to ten years. Tying-in machines used in weave rooms were estimated to save 60% of the cost of hand-twisting methods.

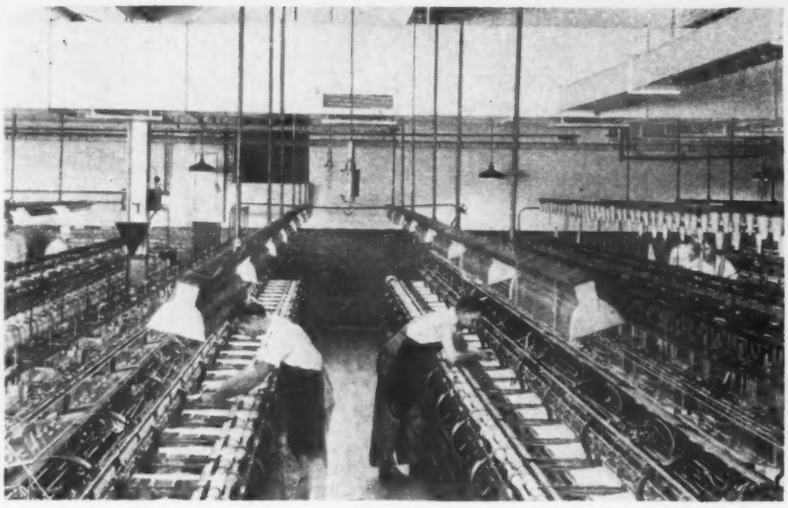
One cotton mill reported projected savings of 100% of the original investment in one year after installation of long-draft, two-process roving frames as replacement for older four-process frames; the same mill also reported savings of 65% of the initial cost in one year after converting three-process picking to one-process. Overhead traveling ceiling cleaners for card rooms were said by one mill man to be saving $1.50 per operating hour, in use in a room containing 200 cards; at this rate the cost of the installation could be realized in one year.

New yarn-conditioning equipment enables mills to realize substantial savings, as illustrated by the following cases which were reported: One mill saved $32.79 per weekly production of 11,000 lb. of yarn; a second mill, with weekly yarn production of 35,000 lb., saved $46.93 per week; a third mill saved $69.38 on a weekly production of 76,800 lb.

The installation of automatic equipment was considered, generally, to be the best possibility for reducing operating costs. A large cotton mill estimated that automatic winders effect 35 to 40% direct savings; another reply stated that new cone winders will save their original cost within one year, and that improved quillers will do the same. New spools and bobbins were estimated to pay for themselves quickly; fiber-head twister bobbins, aluminum- and steel-head jack spools, and fiber-head spools for over-end delivery of plastic yarns will reportedly save their original cost in three years, three years, and one year respectively —the total saving to be realized in any one year, of course, depending upon the number of each that was used.

Slasher-control instruments recently installed are saving 10 to 25%, stated one manufacturer; but another estimated that similar controls effect increased production sufficient to pay for the equipment in two years.

WOOLEN AND WORSTED REPORT. Woolen and worsted mills gave varying estimates of the possible savings in operating costs to be realized due to installing latest-type preparatory and spinning machinery. Some mills thought they could pay off the original cost in as low as four or five years, while one mill went as high as 25 years. A third report provides an estimate that improved preparatory machinery will give double the output and/or require half the labor of existing installations. The same report in-



Air conditioning and fluorescent lighting are planned as part of most knitting-mill modernization programs. Photo by Coze

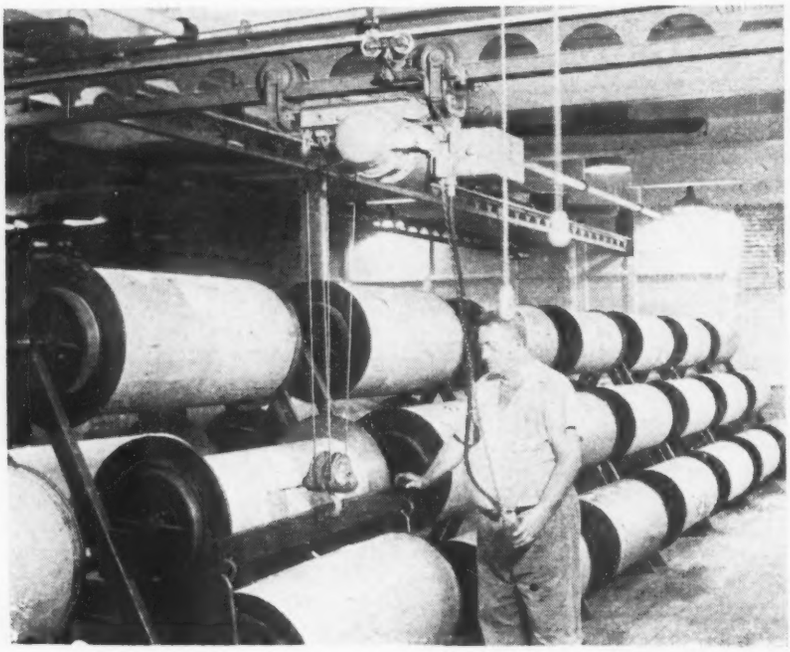
dicates that the latest worsted cards produce twice the poundage of older machines and that new wool-blending systems improve the blend and reduce labor costs at least 50% and, in some cases, up to 70%. The time required to pay for new spinning frames out of reduced costs was estimated at five to ten years by most mills answering this question.

New wool looms will pay for themselves in about two years, it was estimated.

Winding, spooling, and warp-preparation equipment, contemplated by woolen and worsted mills, will reportedly pay for itself in five to ten years. However, warpers, as an individual item, are estimated to be able to save their cost within two years, and slashers within three years.

One woolen mill stated that a new dye tub will pay for itself in three years.

General comments by woolen and worsted manufacturers on methods of reducing operating costs ranged from labor relations to mechanical improvements. One mill suggested stimulation of loyalty and efficiency of employees and holding operations strictly to 8-hr. shifts, with as little overtime as possible; another stated that increase in machine efficiencies through use of ball and roller bearings, individual-motor drives, and higher machine speeds would effect desired savings.



Use of materials-handling equipment is one way in which mills expect to reduce operating costs. The cut shows power-driven overhead hoist handling loom beams at Beaumont Mfg. Co., Spartanburg, S. C. Photo by Coze

SYNTHETICS MILLS RETICENT. Replies from mills spinning and weaving synthetics failed to turn up any usable figures on expected savings. In view of the rapid development of this branch of the industry, in which many of the forward steps have been and are being developed right in the mills, a hush-hush atmosphere prevails in most plants. The synthetics branch, being the youngest facet of the industry, was well equipped with modern machinery at the beginning of the war; but the figures presented on a preceding page show that it is planning to spend a large amount of money on even newer equipment. This would indicate that the mills feel that there are savings to be realized in up-to-the minute installations or money to be made in expansions. In the case of narrow-fabric looms, one report indicates that new models will cut weaving costs about 25%.

KNITTING-MILL REPLIES. The most-mentioned knitting equipment on which savings estimates were made are circular hosiery machines. The consensus is that such machines will save several hundred dollars per year each and will pay for themselves within five or six years. One reply stated that new full-fashioned machines would require 12 years to pay for out of savings; another pointed out that only 24.2% of the full-fashioned machines in this country are less than ten years old and thus considered to be modern.

Outerwear circular knitting machines will save their cost in one year or less, it was estimated by one respondent, but it was the opinion of another that realization of original investment in circular knitting machines will require one to three years, depending upon business conditions. Circular underwear machines will pay for themselves in 15 years, another knitter thought, but admitted that his estimate may be somewhat conservative. He said, "When the buyers' market hits us, we hope to have the latest up-to-date equipment available, but the probabilities are that even so our profits will then be lower than at present. So our figures are based on these reduced profits. It is questionable in my mind

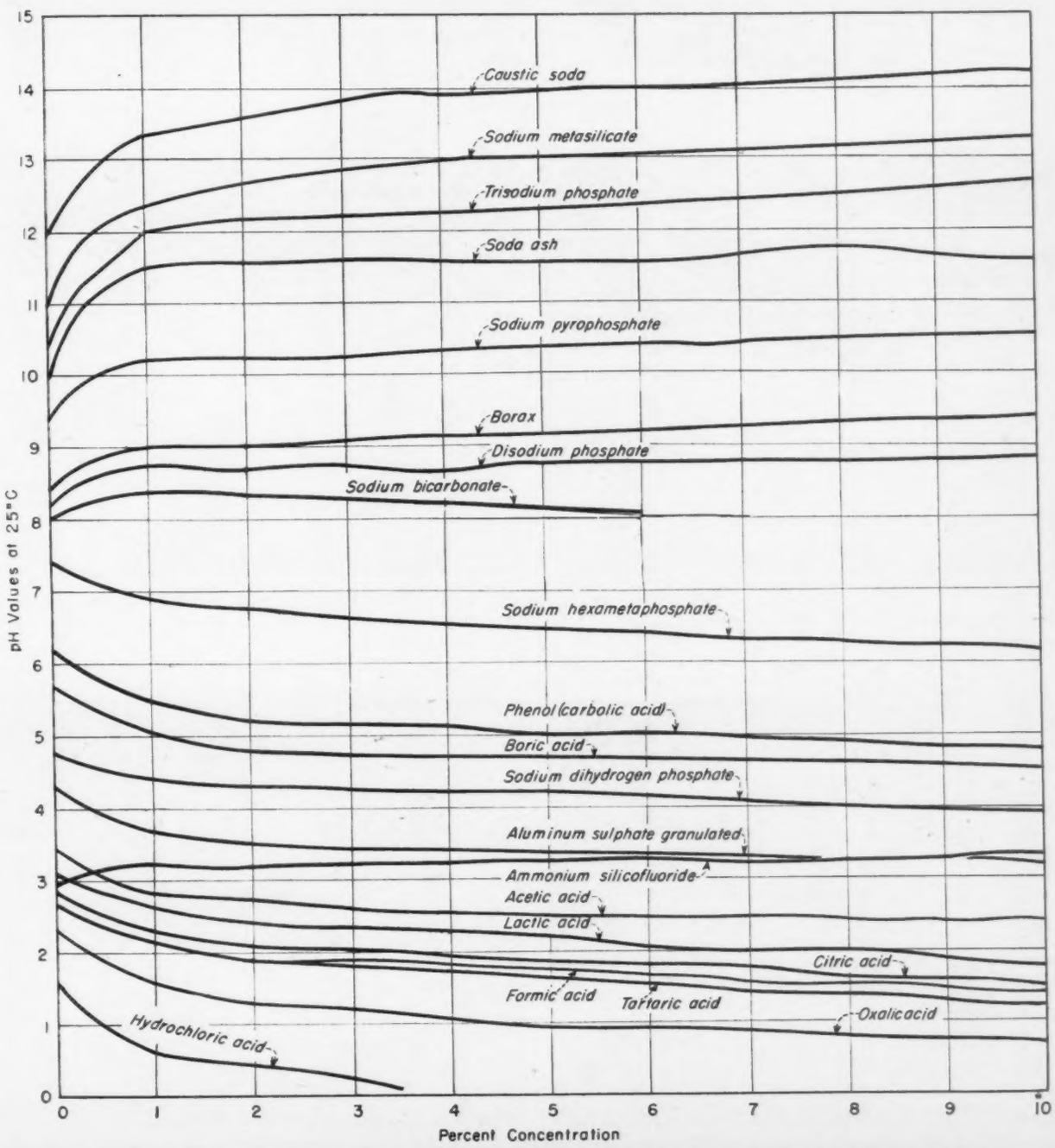
(Continued on page 222)

Chart Gives pH Curves of Some Common Acids, Bases, and Salts

THIS CHART represents the combination of various pH determinations which have appeared in technical publications over a period of years. It has proved quite useful in predicting the pH of chemical mixtures and the buffer action of the individual compounds.

The pH values were determined colorimetrically for all materials except caustic soda. Concentrations are given in percent except for sodium bicarbonate and disodium phosphate, which are in grams per 100 c.c. of distilled-water solution.

Much of the data represents work done at the Stamford laboratories of the American Cyanamid Co.



Pictures Show Steps Followed In CARPET MANUFACTURE

HIGHLIGHTS: *Carpet mills getting back into stride after reconverting from war production — Axminster, gripper, and wilton weaving shown — Design is painted in colors to be used in woven fabric.*

Fig. 1. *When the carpet design is completed, the colorist selects from his sample drawers the colors he will use, matching them with those on the design.*

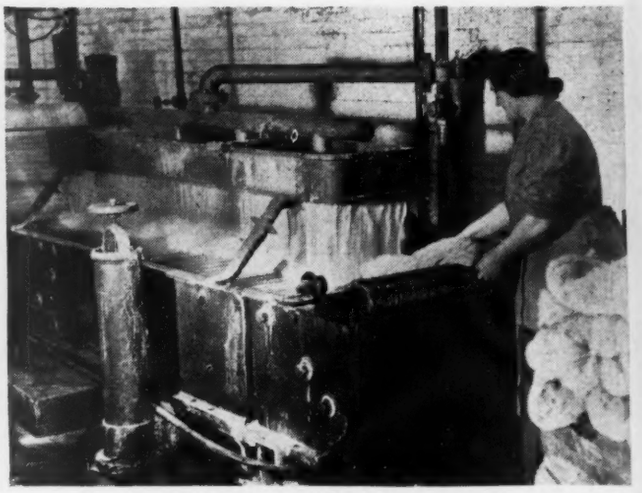


Fig. 2. *The calculated quantities of yarn, in skein form, are scoured. A continuous belt carries the yarn through a series of alkali and soap baths.*

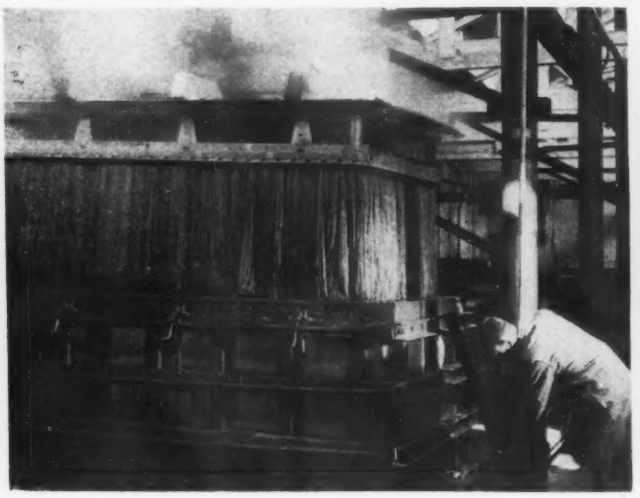


Fig. 3. *The pile-warp yarn is dyed the desired shades, using dye formulas obtained from the colorist's matching samples.*

Fig. 4. *When the dyed pile yarn is dry, it is taken to skein winders and wound onto bobbins.*

CARPET MILLS are getting back into stride again both here and abroad after almost four years of wartime production in which much of the available capacity was turned to such essential items as canvas and tent duck. The accompanying photographs show steps in carpet manufacture as it is practiced in England and illustrate the processes used in making axminster, gripper-axminster, and wilton carpeting and rugs. Beginning with the completed design in which colors are painted in in their true shades, and following through the subsequent processes of yarn dyeing, spooling, warp preparation, filling winding, weaving, and inspection, the photographs show the various steps followed until the finished carpeting is ready for shipment.

All photographs courtesy British Information Services.

Fig. 5. *Warp pattern bobbins for axminster looms are made up from spools. The ends required for one line of pile in the carpet are wound on the bobbin in correct order using the design as a guide. Here a 45-in. pattern is being formed.*

Fig. 6. *Close up of a 45-in. warp pattern bobbin shows colored ends passing through the comb and onto the bobbin. Pattern is mounted on drum over the spooler.*

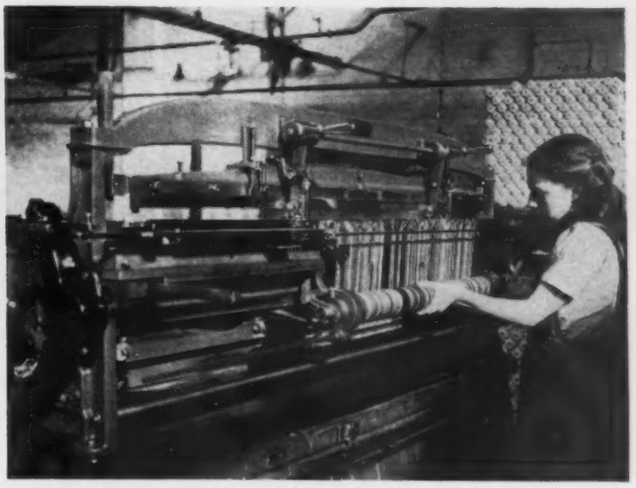


Fig. 7. *A machine is used to pass each end from a warp pattern bobbin through a hollow tube which is necessary to guide the end into its proper place in the fabric.*

Fig. 8. *While the pile yarns are being dyed and processed, the jute or cotton ground warp is prepared. It is warped and sized directly from cheeses.*

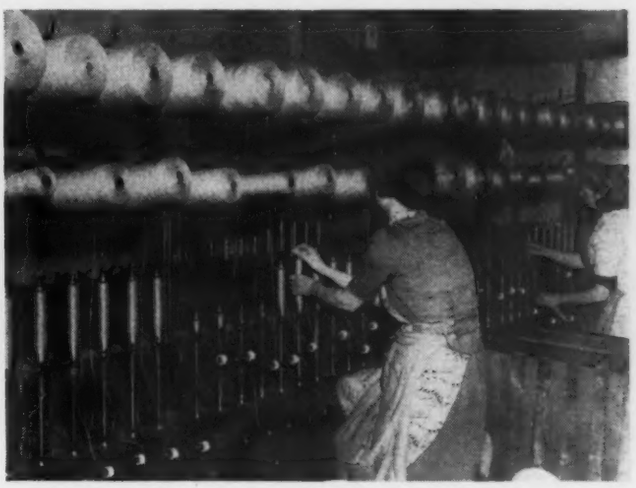


Fig. 9. *Filling packages for use in shuttles are wound from revolving cheeses. Other filling yarn is inserted from an external supply in axminster looms.*

Fig. 10. (right) *On the axminster loom, the pattern bobbins are placed on an endless chain in correct sequence, and come down one row at a time, each to form a line of pile in the fabric. As each falls into place, the ends are guided through the backing fabric by the hollow tubes through which they are threaded, the ends are caught and tucked up again on the other side of filling, and the ends are cut so that about an inch is left looped around the filling to form the pile.*

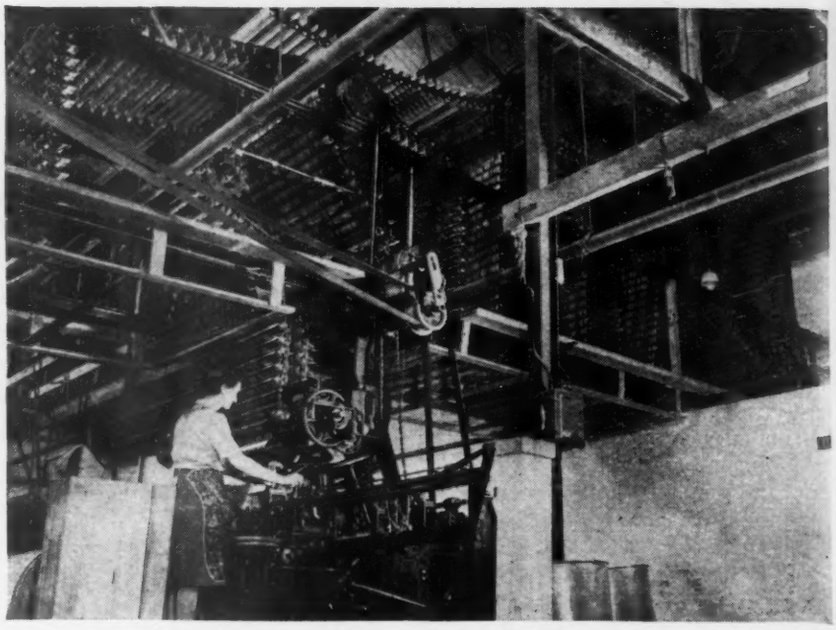
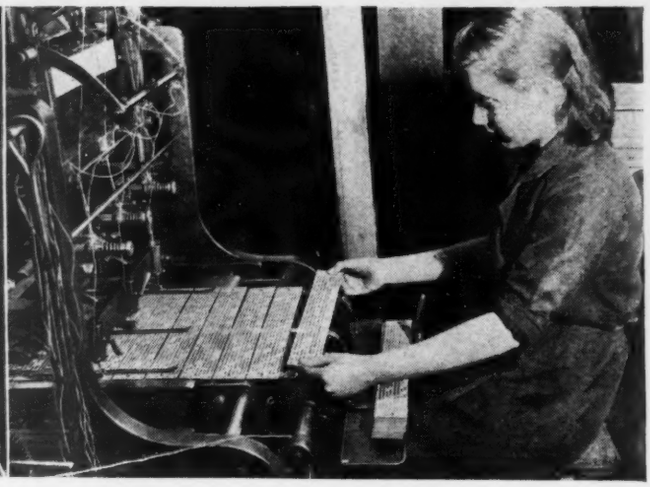


Fig. 11. (below) *A different method of forming the pile is used in gripper-axminster and wilton weaving. Since these types of looms employ jacquard heads, the design pattern is punched onto cards.* **Fig. 12.** (below right) *Punched gripper or wilton pattern cards are laced by machine.*



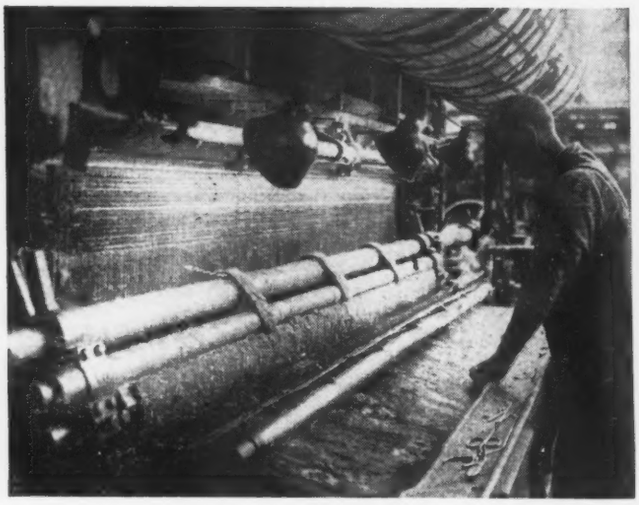


Fig. 13. *At each pick in gripper-axminster weaving, a line of grippers rises, as determined by the pattern; and the desired colored ends are seized, cut off, brought down and thrust through the fabric, and tucked up from underneath around the filling.*

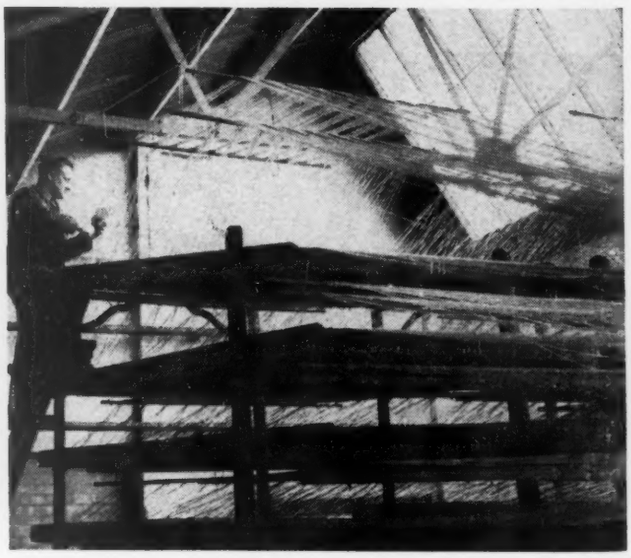


Fig. 14. *The pile warp for gripper-axminster carpeting is carried on spools which are mounted in trays behind the loom.*

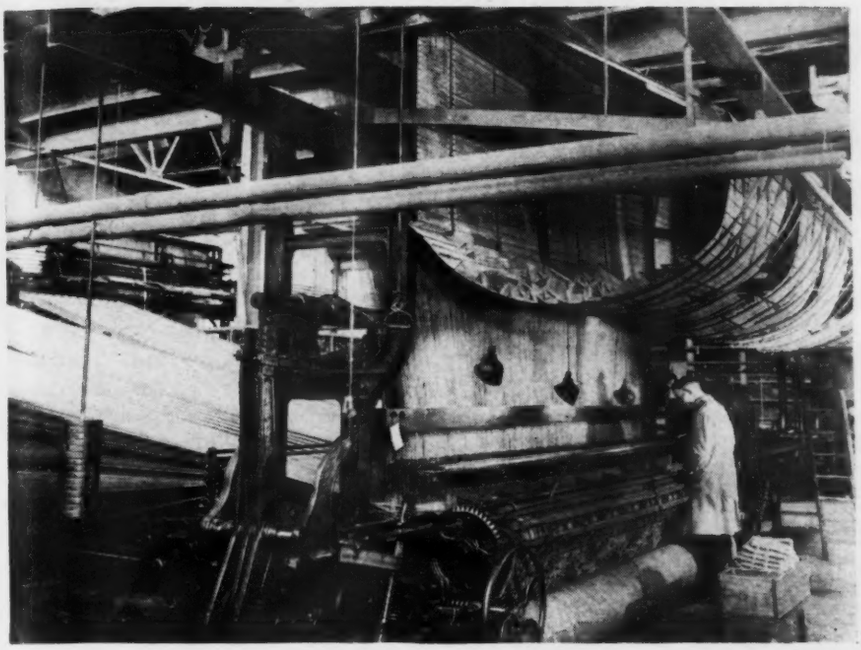


Fig. 15. (left) *In jacquard-wilton weaving, color selection is by card as in gripper-axminster; but instead of being merely tucked into the backing fabric, the pile ends weave into the fabric continuously and are brought to the face when it is desired that they show. Raised pile ends are looped over thin steel rods; when the rods are withdrawn after several picks, knives on the ends cut the loops, forming the pile. Brussels carpet is woven the same way except that the knives are omitted, and a loop pile is formed.*

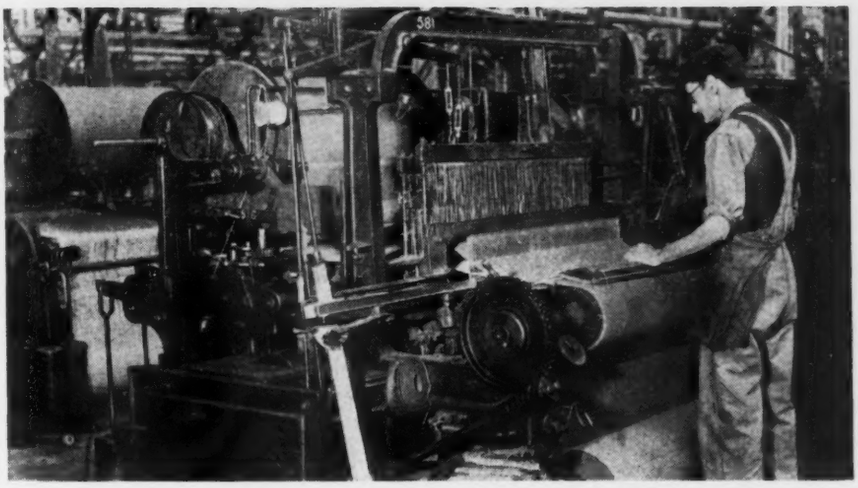


Fig. 16. *Plain wilton carpets are woven on 3-harness cam looms, using separate beams for pile and ground warps.*

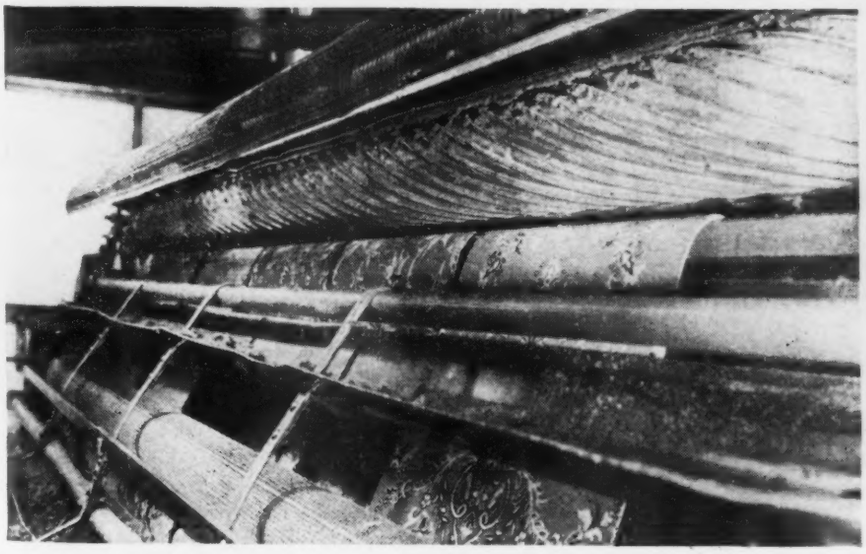


Fig. 18. *To make sure the pile is smooth and even, the carpet is given a light shear.*

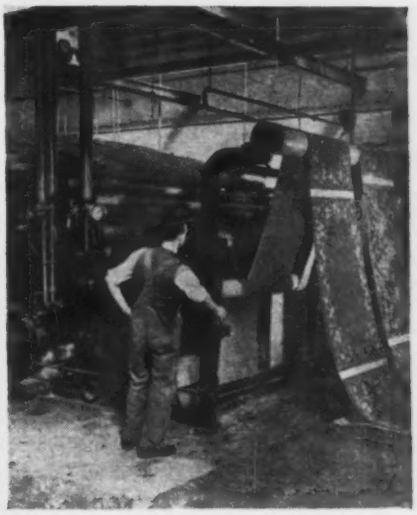


Fig. 17. *Off the loom, carpeting is rolled, measured, and inspected; then it is brushed, steamed, rolled, and dried as shown here. If it is axminster, it is also back sized.*

Fig. 19. *Finally, the backing between the individual rugs is cut, the ends are cross stitched, and a last searching inspection is made. Mending or repairing has previously been done (not shown).*

PERSONNEL PROBLEMS
Featured in Supervisor Course

HIGHLIGHTS: *Personnel case studies used by mill in supervisor training-class—Actual case studies of personnel problems analyzed by both new and experienced supervisors—Typical problems and how they were handled are outlined.*

By R. THURMAN TAYLOR

TRAINING CLASSES for both new and experienced supervisors have disclosed that personnel case studies offer practical education in how to handle personnel problems as they arise in the mill. One training class has selected the following case studies as representative of the type of problems encountered by the overseer or second-hand. A previous article outlined other case studies. [T. W., Oct. 1946.] In some of the examples, which follow, the comments of the training class on the action taken by the supervisor have been included.

THE TINKERER. The man was about 28 years old and had been working for the company several years. He was a weaver and a regular worker, but one that simply could not concentrate on one thing at the time.

First, he got into the habit of talking to other workers a lot. This seriously interfered with the other workers' jobs, and the supervisor had to stop it.

Then, he began to bring mechanical gadgets to work with him. He was a mechanical tinkerer on the outside and worked with everything from sewing machines to automobiles. Before the supervisor became aware that the weaver was tinkering on company time, the worker had littered the aisle between his looms with an assortment of lawn-mower and sewing-machine parts. The supervisor stopped it.

The man's next diversion was to hang around the spare-floor end of his set of looms and listen to the supervisor talk with other people. When this was stopped, he began to watch the supervisor, and when the latter was engaged elsewhere, the weaver would go outside the mill and smoke. The mill management did not frown too much on this, but this particular weaver would always over-stay his time. Finally, the worker brought another sewing machine part to the mill one day, and the supervisor happened to see him as he entered the mill. The supervisor told him not to work on the part until after working hours; but just as soon as the foreman turned his back, the weaver began to tinker again.

After finding that his instructions had not been observed, the foreman called the worker to his office and plainly told him that if he did not concentrate on his job in the future, he would be fired.

The training class followed the reaction of the employee in this case and found that he had never again tinkered on the job. However, it was suggested that the foreman might capitalize this man's varied ability by making a fixer out of him.

The man was a good worker, but he liked to tinker with mechanical gadgets on the job. Sometimes he would bring lawn-mower or sewing-machine parts with him and work on them on company time.

TWIST-IN OPERATOR BALKS. The woman had worked with the company for several years as a twist-in operator, but due to process changes she had been given a chance to learn to repair smashes. Twist-in operators were needed only occasionally.

One day the supervisor had a special twist-in job. Seeing that the smash-hand (the former twist-in operator) was not too busy, he asked her to twist-in the special warp. She refused to do it and said she thought that this would result in her doing more work than the other girls.

Instead of showing that he was upset over the girl's refusal, the foreman

calmly told her that all smash hands were asked to do odd jobs when they were not busy and that the reason he asked her to do this particular job was that the warp was a special one which required a lot of skill. He complimented her on her past cooperation, and then walked away without again asking her to do the new warp. The woman cooperated and did the job.

A WARPER CREELER. The young man attended school during the day and worked on the second shift. He was 17 years old and had been working for the company about a year. Quite often he was late because of school activities, but he was always excused by the foreman.

His job included doffing full cheeses behind spoolers, and creeling warpers. He also had to punch operators' production tickets, giving them credit for the production they had run.

Accidentally, the foreman discovered that the boy was favoring learner operators by crediting their tickets with work which they had not done. The learner operators had talked him into this practice by telling him that they needed the extra money.

The supervisor talked to the young man, emphasizing that this practice was actually stealing money. (This had been going on for only a short time.) He asked the boy to tell him what he should do, were he in the foreman's shoes. The boy replied quickly that the only thing to do was to fire him.

The supervisor decided to study it over the week-end and let the young man know the next Monday. When the day came, the employee asked for permission to continue on the old job and promised to do the work correctly. The supervisor agreed, and the young man made a good worker.

THE ABSENTEE. The man was a weaver, 24 years old, and had worked for the company eight months. He worked on the second shift and had a poor attendance record. He laid out from work and did not bother to arrange his vacations with the supervisors.

Upon his promise to work regularly, he was transferred to the first shift. But soon he began to lay out again; and when questioned by the supervisor, he just laughed and said that he had no excuse.

The man had been talked to considerably about his absentee record, and the foreman decided that it was time to take some action. The case was beginning to affect the department morale. Consequently, the weaver was fired.

The girl decided that the foreman's request would result in her doing more work than the other girls, and she refused.

While commenting that the action was good for department morale, the training class did not agree entirely with the supervisor's actions throughout the case. They believed that he erred first by transferring the man to the first shift. The man's record had not justified a promotion to a better shift, and he also had been working only eight months for the company. In other words, the class believed that the chronic absentee should have been handled entirely by the second shift—and either improved there or fired there. Promotion to the first shift did not help him, and neither did it help the feelings of other employees of the second shift, employees who undoubtedly had much better attendance records.

THE HELPER. The man was about 40 years old and had been working for the company about seven years. His job had grown to such an extent that a helper had been added. The man did not want the helper but accepted him.

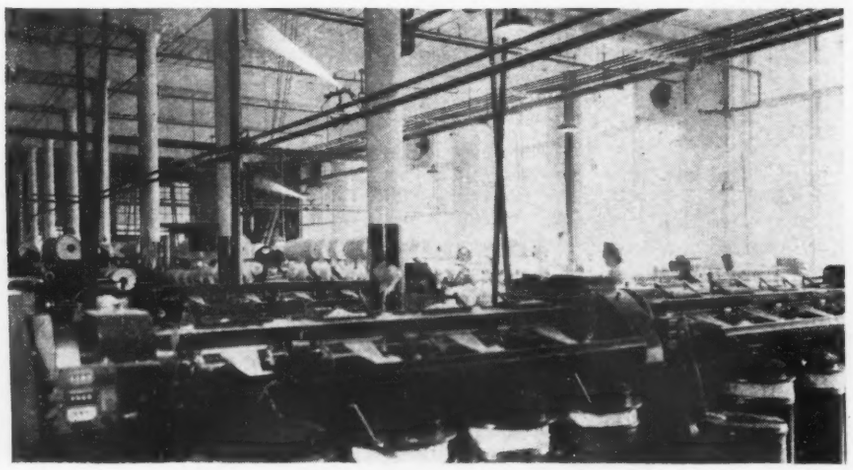
Shortly thereafter the employee began to complain about the helper. There was no basis for the complaints, yet the supervisor moved the helper just to satisfy the operator. Another helper was given the man with the same results; the operator complained about the new helper.

The supervisor decided to check on the situation. He found that the operator had a friend on the outside who wanted the job as helper, and he discovered that the operator had decided to get the job for the outside man. The supervisor, therefore, told the operator to work with the new helper without complaining; and advised him that, if another shift was necessary, the operator himself would be moved. This action cleared up the case, and the operator began to cooperate with the new man.

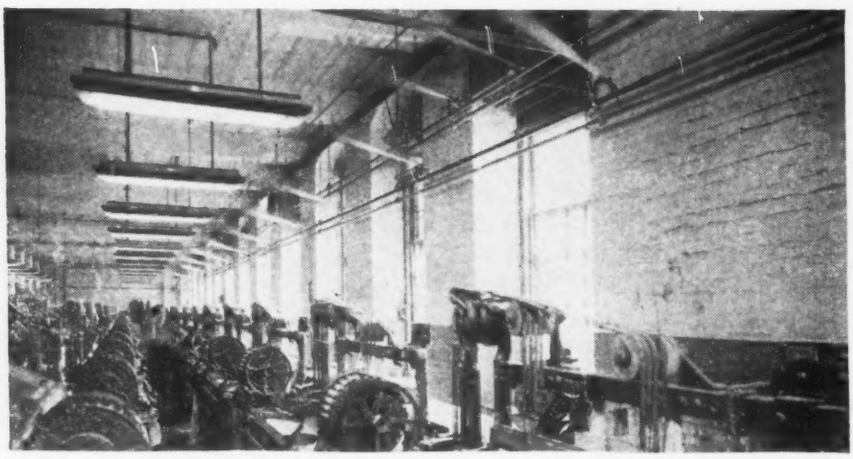
The young man creeled warpers, and one of his jobs was to punch spooler operators' production cards. It was discovered that learner operators had persuaded him to give them a few extra dozen.

MODERN HUMIDIFICATION
Installed in Lonsdale Mills

HIGHLIGHTS: *Evaporative cooling and humidification system gives 60% r.h. and inside dry-bulb temperature not more than 17° F. above outside wet-bulb figure—Air used as vehicle to carry heat units out of building—Blackstone weave room has 298 atomizers—Uses 140,000 cu. ft. outside air per minute.*



Combing and drawing department on second floor of the Blackstone Mill of Lonsdale Co., utilizes a straight humidification system.



Weave room of Berkley Mill of Lonsdale Co., a Textron, Inc., subsidiary, showing atomizers of the humidification and evaporative-cooling system lately installed. Looms are weaving 40s to 92s yarn of combed Pima cotton.

AUTOMATICALLY-CONTROLLED evaporative cooling and straight humidification systems, designed to have ample capacity to meet the severest hot weather atmospheric conditions recorded by the weather bureau for each locality in past years, have been installed in the Blackstone and Berkeley Mills of the Lonsdale Co., a subsidiary of Textron, Inc., at Blackstone, Mass., and at Berkeley, R. I. These systems replace old humidification systems. The one in the Blackstone Mill served for about 45 years.

For combing and drawing in the Blackstone Mill, straight humidification has been provided to supply 55% r.h.

To care for the different conditions and requirements in the spinning department, the Blackstone Mill has been equipped with evaporative cooling. Provision for 60% r.h. has been made with inside dry-bulb temperature never in excess of 17° F. above the outside wet-bulb temperature, in spite of the heavy heat loads imposed by the spinning process.

Inside dry-bulb temperatures will always be below 92° F., except on a few severely hot days in summer when the outside and inside conditions, as shown in Table I, may be expected to occur based upon records of the weather bureau, when outside wet-bulb temperatures reach 75° F.

The summer heat load is calculated at A,575,000 B.t.u. per hr. The generated heat input formerly produced inside winter temperature of 90° F. and relative humidity of 27% when outside temperature was 14° F.

EVAPORATIVE PRINCIPLE. To prevent such an hourly heat input from creating excessive summer temperatures, evaporative cooling is used which works upon a principle which may be simply explained as follows:

Ordinary atmospheric air at a fixed temperature contains a certain number of heat units per cubic foot of air. When moisture is added to this cubic foot of air, it can contain a consider-

ably larger number of units of heat without showing an increase in its dry-bulb temperature. To utilize this phenomenon for evaporative cooling, relatively dry air is introduced and moisture is added to it within the room, which treatment enables the air to take up heat dissipated by machinery and processes without showing a rise in dry-bulb temperature. As a final step, the moistened and heated air is expelled from the room. This cycle is in effect, two pumping operations: The first, pumping in dry air; the second, pumping out moist air which has picked up and carries with it a full load of heat units. By this operation, the heat is transported to the outside, leaving the inside temperature and humidity conditions those desired for the most efficient operation of the machinery and the maximum comfort for the operatives.

A comparison of outside and inside air nearly always discloses a humidity deficit in the mill rooms due to the constant input of mechanical heat in these rooms.

Should the exceptional condition take place with abnormally high outdoor humidities, the difficulties caused by the temporarily excess humidity in the mill would be generally negligible, and would not, some engineers believe, justify the cost of a de-humidification or refrigeration system, which would be called upon to operate on only a few days each year.

As previously stated, the Blackstone spinning room has a calculated heat input of 3,575,000 B.t.u. per hr. To absorb this heat-load in severely hot weather calls for the introduction into the room of 220,000 cu. ft. of outside air and 4,300 lb. of moisture per hour. The air is supplied by 25 fan-forced air units with automatic, variable control; and the moisture is supplied by 292 atomizers, with two atomizers in front of each unit and the others distributed about the room. The system provides the room with 13½ complete air changes per hour.

WEAVE-ROOM SYSTEM. The weave room of the Blackstone Mill is also equipped for evaporative cooling. A typical temperature inside the weave room during severe winter weather before installing evaporative cooling was 87° F. dry-bulb, when the outside temperature was 14° F. above zero. The heat input to this room is calculated to be 2,700,000 B.t.u. per hr. in severely hot weather. The summer conditions are maintained by the evaporative cooling system as shown in Table II when the outside wet-bulb temperature reaches a high of 75° F. Cooler inside conditions will be maintained on all summer days when the outside wet-bulb temperature is below 75° F.

Operation of this evaporative cooling system calls for the introduction into the room of 140,000 cu. ft. per min. of outside air and the addition of 3,525 lb. of moisture per hour. The air is supplied by 21 fan-forced air units and the moisture of 298 atomizers arranged similarly to the distribution in the spinning room. This system gives about ten complete air changes per hour.

The water supply for the atomizers is brought up to room temperature before introduction into the system to avoid condensation on the water pipes. This temperature rise is obtained by using the cooling water from the air-compressor after-cooler or from the water-jacketing of the air compressor itself or both. From that point, it goes into the lines supplying the atomizers.

TABLE I—BLACKSTONE SPINNING ROOM

	Temperature F.		R.h.	Total heat B.t.u. per lb. of air	Grains moisture per lb. air
	Dry bulb	Wet bulb			
Inside	92°	80°	60%	42.52	136.0
Outside	92°	75°	46%	37.65	103.5

TABLE II—BLACKSTONE WEAVE ROOM

	Temperature F.		R.h.	Total heat B.t.u. per lb. of air	Grains moisture per lb. air
	Dry bulb	Wet bulb			
Inside	85°	79.7°	80%	42.25	145.5
Outside	92°	75°	46%	37.65	103.5

Spinning department of the Blackstone Mill where provision is made for a 60% r.h. and temperature always below 92° F., except when abnormally severe summer temperatures exist outside.

Weave room of Blackstone Mill, with modern installation of evaporative-cooling and humidification system. Looms are running on combed Pima cotton yarns of 40s and finer counts. There are 298 atomizers in this installation.

PNEUMATIC PICKERS
Speed Spinning-Roll Cleaning

HIGHLIGHTS: *Mechanical tool picks spinning rolls on 7,200-spindle assignment at Columbus Mfg. Co., Columbus, Ga.—Six-inch blade revolves at 12,000 r.p.m.—Job specification now extends to breaking down cleaning tasks.*

By E. G. HUBBARD, JR., *Overseer Spinning, Columbus Mfg. Co.*

JOB SPECIALIZATION in the spinning department of Columbus Mfg. Co., Columbus, Ga., has been advanced another step with the department-wide adoption of pneumatic roll-pickers and the assignment of operators specially trained to perform this job. Instead of picking the rolls on a 1,440-spindle assignment as was formerly done by a clean-off hand, each roll picker now picks the rolls on a 7,200-spindle assignment.

The new method of cleaning rolls has also resulted in advantages to the operator. One of the hardest tasks of the cleaner was picking rolls with her fingers, and this job kept her fingers sore and her fingernails broken. Since it was necessary in many instances to use a stand hook to dislodge some of the chokes on the rolls, many slight injuries occurred as a result of the stand hook slipping and scratching the cleaner's hand.

LESS OIL WASTED. The pneumatic picker removes much less oil from the top-roll necks than did the hand picking, and less oiling is required to keep the rolls lubricated.

For a number of years, the practice at Columbus Mfg. Co. has been to employ clean-off hands to do all the cleaning on spinning frames except wiping back sides. This layout not only leaves the spinner free to do the more skilled operations of creeling roving and getting up ends, but it also relieves her of cleaning operations which would get oil on her hands which later would be transferred to the yarn.

However, to relieve the operator of the tedious task of manually picking rolls, the mill began a search to secure a mechanical tool which would do the job. The picking blade of one of the various pickers tried was driven by the tape on the spindles through a short, flexible cable. Attaching this tool in driving position against the tape was difficult, the tool would clean only two or three stands of rolls before it had to be moved and remounted, and the speed of the picking blade was not great enough to do a good cleaning job on the dirtier rolls.

PNEUMATIC PICKER. An electrical picker was found to be too heavy for efficient handling and to generate too much heat for long periods of operation. Air-driven pickers made in the mill shop did not operate fast enough and were subject to jamming, but they indicated that the solution to the problem might be an improved pneumatic picker.

Such a picker, now commercially available, gave satisfactory results, and it was adopted for use in the entire spinning department. The tool weighs 17 oz. and is equipped with a round, tapered 6-in. blade revolving at approximately 12,000 r.p.m. It is put into operation by pressing a hand-valve control fitted on the tool at a place convenient to the operator's thumb when the device is in hand. When the operator releases the control, the picker stops instantly.

In using the tool, the operator picks the top rolls, bottom steel rolls, tops of steel-roll stands, and the metal rods between the bosses on the revolving clearers. When the picker blade becomes loaded, the operator releases the hand-valve control and strips the lint off the blade with her free hand.

Fig. 1. The 6-in. blade of the pneumatic roll-picker can be used to pick the top and bottom rolls, roll necks, roll stands, cap bars, and roll-weighting saddles.

JOB ASSIGNMENTS. Before adopting the pneumatic roll-picker, the job of a clean-off hand consisted of six frames of 240 spindles each, a total of 1,440 spindles. The cleaning schedule was as follows: weekly—wipe creels; twice weekly—clean revolving clearers and ring rails; every other day—clean roll stands, cap bars, flat top clearers, under clearers, roving, roving trumpets, and traverse bars; daily—pick all front rolls and one-half the total assignment of back and middle rolls; twice daily—brush rails and rockers and clean thread guides on frames under overhead cleaners; hourly—clean thread guides on frames not under overhead cleaners.

After training some of the clean-off hands to use the roll pickers, the cleaning job was broken down between cleaners and pickers. Each roll picker now cleans the rolls for 3,600 spindles each day, cleaning the same rolls each 48 hr. The cleaners now have no rolls to pick, and their assignments consist of approximately 2,200 spindles each day where overhead cleaners have not been installed and approximately 3,000 spindles where overhead cleaners have been installed.

An air outlet with a control valve is placed at the motor end of each fifth frame, and an air hose about 60 ft. long is used with each picker. Thus, on a single line of frames, an operator can pick the rolls for 1,200 spindles before moving the hose to another location, so that only three different hose connections must be made during an 8-hr. shift.

OLD METHOD

Clean-off Hands

Assignment	1,440 spindles
Front rolls (top and bottom)	Daily
Middle and back rolls (top and bottom)	One-half assignment daily
Rails, rockers, thread guides (frames with overhead cleaners)	Each 4 hr.
Thread guides (frames without overhead cleaners)	Each hour
Roll stands, cap bars, top clearers, under clearers, roving, roving trumpets, traverse bars	Every other day
Revolving clearers, ring rails	Twice weekly
Creels	Weekly

NEW METHOD

Roller Picker

Assignment	7,200 spindles
Pick all rolls	Every other day

Clean-off Hands

Assignment	
With overhead cleaners	3,000 spindles
Without overhead cleaners	2,200 spindles

(All cleaning done twice daily as on former schedule.)

Fig. 2. Schedules for cleaning spinning frames under the former method of picking rolls by hand and under the present method of using pneumatic pickers.

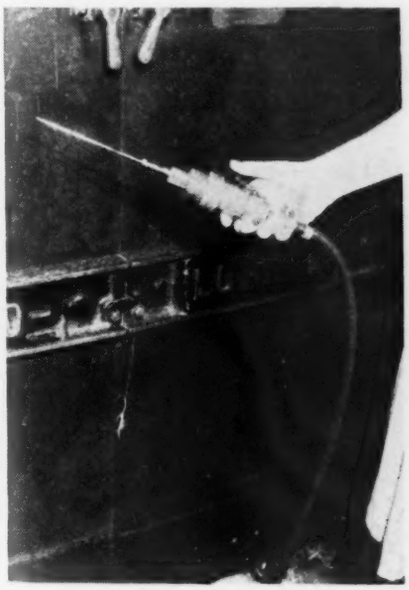


Fig. 3. With the tool held in position for use, the valve-control lever is immediately below the operator's thumb. Only slight pressure on the lever is required.

Fig. 4. When the picker is not in use, the blade is sheathed in a homemade leather case as a safety measure. The blade is easily kept clean.

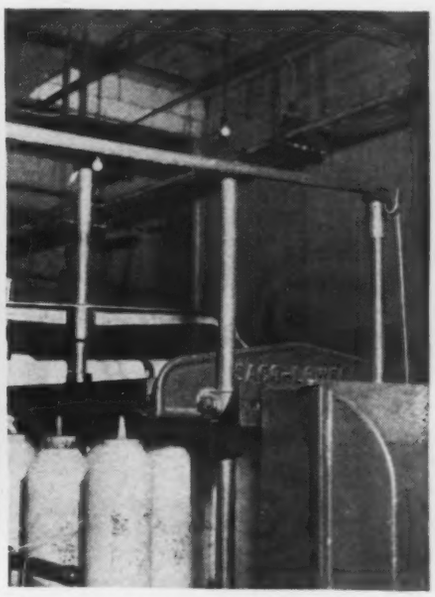


Fig. 5. In order to hold the 60-ft. hose used with the picker out of other operators' way, the mill has mounted hooks on creel rods to support the hose.

TECHNICAL CONTROL
Means Better Tire Cord

HIGHLIGHTS: *Tire-cord mills, always skilled in technical organization, develop new emphasis on product control — Individual product characteristics, quality factors, and processing details are spot-checked for accuracy—Function varies in individual mills.*

By C. MALLARD BOWDEN
Southern Editor, TEXTILE WORLD

LEAVING DISCUSSIONS of the relative virtues of rayon and cotton in tire fabrics to the statisticians, production executives of large tire-cord mills continue to make cord of both fibers and mechanical yarn and fabrics largely of cotton. But, what is more important, they continue to make cord and fabrics with superior technical skill. Among the textile pioneers of such technical and organizational methods as laboratory control, functional-technical supervision, engineering and cost standards, maintenance control and research, the tire-cord mills are developing with increasing emphasis a

All pictures through courtesy of United States Rubber Co. Pictures taken at Shelbyville, Tenn., plant.

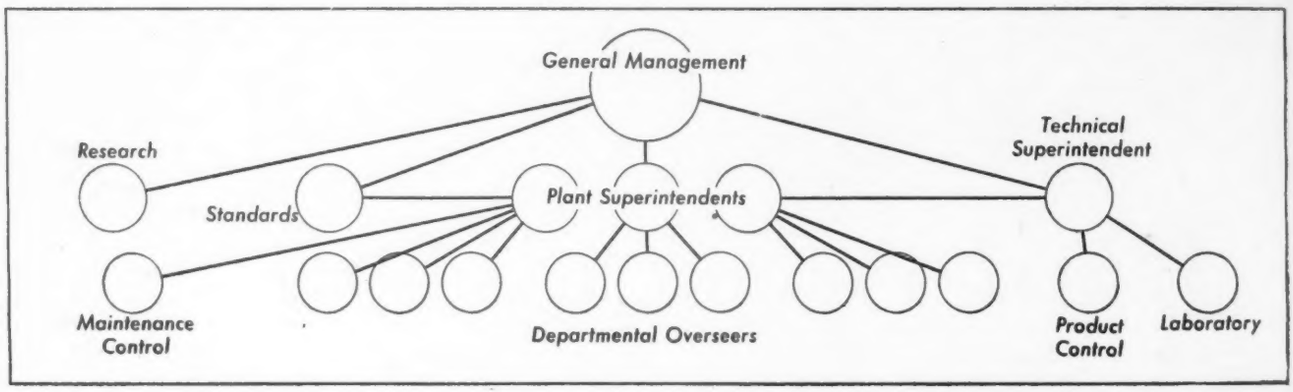


Fig. 1. The management-organization chart portrays the part played by product control in the technical supervision of tire-cord mills. These mills were among the first textile plants to foster such techniques as laboratory control, engineering standards, maintenance control, and others; and the new ally of management, product control, gives them further checks upon the quality of individual products.

Fig. 2. Cotton tire cords demand a high grade of lint, which is processed for maximum breaking strength. Stock selection and separation, processing accuracy, and quality inspections must be rigidly controlled. In the picker room, for example, product control may make spot checks of the cotton opened for specific products, as well as of lap weights, regain, and other processing conditions. Results of tests go directly to technical supervision for comparison with standard specifications.

Fig. 3. Product control is coordinated with, but usually separated from, laboratory control. It may call upon the laboratory for verification of specifications, such as single-yarn count, cord size, twist per inch; but the responsibility for maintaining proper specifications in the various products remains with product control. Note stress-strain recorder.

quality technique known in some mills as product control.

Application and, indeed, the name of the control vary with individual mills. In some cases, the control organization operates under the technical superintendent; in others, under the laboratory or quality setup. Shown in Fig. 1 is a typical organization of product control, along with its connection with other mill departments.

However, product control is more closely identified with the technical supervisory department, stemming as it does from the desire to control as far as possible the different characteristics of the individual products. These characteristics are stated in the original production order for the product; and insofar as the determination of such factors as twist per inch, elongation, counts or cord size, fabric sley and picks are concerned, product control would, of course, use existing laboratory equipment and personnel.

NEW CONTROL FUNCTIONS. However, there are numerous factors of product quality which have not been centralized into one control in the past, and these factors are the ones usually associated with product control as accomplished in tire-cord mills. Generally, these factors may be grouped into the following classes:

1. Stock selection and separation.
2. Processing details.
3. Quality or quantity inspection throughout the mill.

Tire-cord mills process a high grade of cotton of good staple length, and maintain the quality of raw material

Fig. 4. Daily checks on roving frames or other processes may be made by product control in its effort to maintain product specifications. Such details as twist per inch, roll settings, hank roving, and stock separation may be compared with standard procedure.

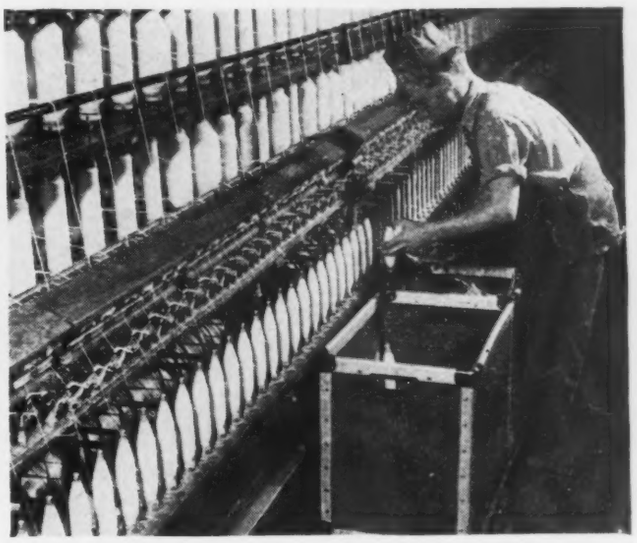


Fig. 5. As applied to the spinning room, product control may undertake a complete check by product specifications of a particular order in the yarn-manufacturing departments. In spinning, twist is a critical point to review, since tire-cord twist factors are relatively low (range 3.20 to 3.50).

Fig. 6. Spooling of singles yarn for tire cord is as precise as that for other high-quality textiles. Snickplates are set closely to insure good-running characteristics in the yarn when it reaches twisting and weaving. Yards per bobbin and per cheese, settings, and stock separation are points most likely to be spot-checked by product control.

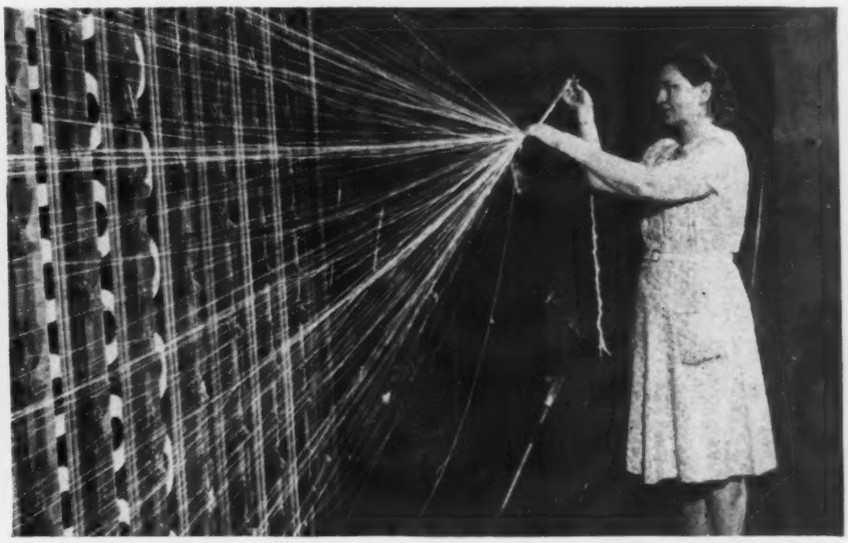


Fig. 7. Because of low twist in singles yarn, the warping process is extremely important in preparation for ply twisting. Clean creels and beam barrels, smooth clutch action, and careful operations are some of the processing requirements. Here, product control may easily obtain the final singles-yarn weight and establish some control over carding and spinning weights.

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throughout the manufacturing processes. For instance, useable waste may be discarded into mixes which do not go into tire cord. Thus, in addition to several prime mixes for tolerable break factors in tire cord, the mill may have other mixes for different end-products, as well as synthetic yarns which are processed from the yarn stage through twisting or weaving. Moreover, the yarn or finished cord may be manufactured in a variety of counts, plies, and twists.

Centralized product control develops identification methods for these varied stocks and numbers, makes spot checks to determine their accuracy, and can either call upon laboratory equipment and personnel for special tests or undertake such tests itself. In addition to this centralized, unbiased check upon product characteristics, there are the conventional intra-departmental controls, such as the warehouse reports of stock opened, departmental systems or identification which are merely coordinated by product control, and the alertness of machine operators.

Thus, when a specified grade and length of cotton is called for in an order for 23/5/3 cord, product control knows by actual spot-checks that this particular cotton was introduced and opened, and that the stock was properly separated throughout the manufacturing processes and shipped to the customer.

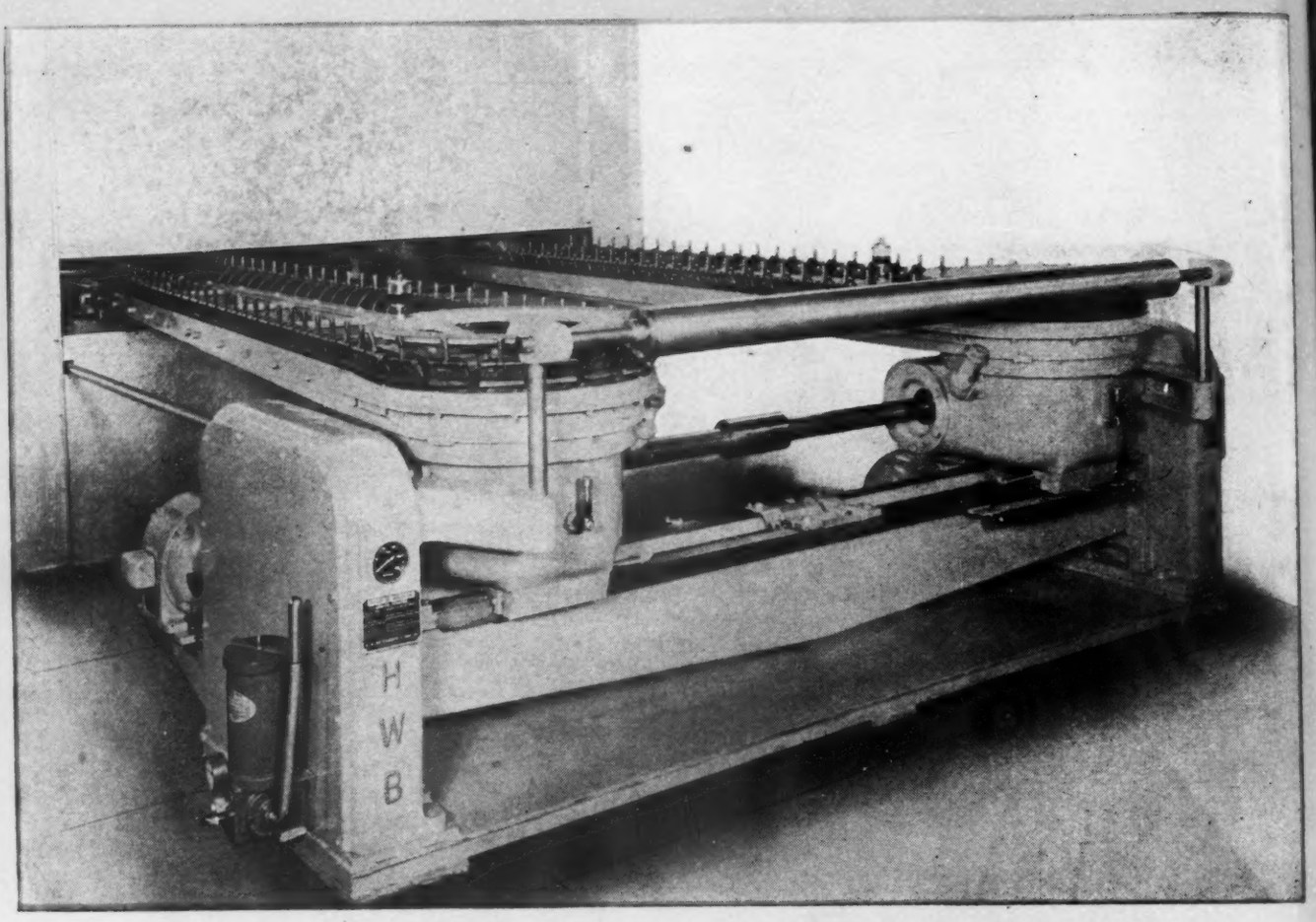
To illustrate actual and possible applications of product control in manufacturing cord, the pictures and text shown in Figs. 2 to 11 are self-explanatory.

Fig. 8. The operator is counting the number of plies on a beam-creeled ply twister. The count for ply and other inspections throughout the twisting operations may be coordinated (and later re-checked) by product control.

Fig. 9. Starting a warper beam on the ply twister, the operator may set in motion a series of product checks developed and periodically re-checked by product control—ply count and twist, yards per beam, yards per doff, beam and bobbin identification, etc.

Fig. 10. To build large packages not obtainable on small-gage ply twisters, the plied yarn is tied by hand knotter and wound on spooler or winder for the second twisting operation known as cable twisting.

Fig. 11. Some finished cord is packaged on tubes by high-speed winders; other cord is woven into fabric in the same plant that spins the cord. Spot checks at the winder are important, since winding is the final operation before inspecting, packaging, and shipping.



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Cotton Mills Stress ACCIDENT COSTS

HIGHLIGHTS: *Hidden costs of accidents are four times the amount spent for compensation and medical attention—Brandon Corp. reduces compensation cost per 1,000 man-hours from $6.57 to $2.30 and decreases accident costs by 43.1%—Possible savings in compensation and unemployment insurance can reach $3.80 per $100 of payroll—STA told of mill programs.*

ACCIDENT AND HEALTH PROGRAMS were studied by more than 200 textile executives at the October meeting of the South Carolina Division of the Southern Textile Association at Clemson, S. C. J. B. Templeton, superintendent of the Brandon Corp.'s Poinsett Mill in Greenville, presided, assisted by J. L. Adams superintendent of Beaumont Mfg. Co., and Newton G. Hardie, general manager of Laurens Cotton Mills. Robert T. Stutts, superintendent of Easley Cotton Mills, was elected chairman of the division's weaving section.

The condensed excerpts from the talks by leading personnel authorities at the meeting indicate a vigorous attitude toward the closely related personnel problems of mill safety, employee health, and production.

Accident Frequency as Related to A Good Safety Record

BY C. A. ANDERSON, *District Claim Manager, American Mutual Liability Insurance Co., Greenville, S. C.*

PRESENT CONDITIONS require that the problems of accident frequency be given careful consideration and prompt attention. Here in South Carolina we have a liberal Workmen's Compensation Act and a more liberal administration of that act which result in high accident costs and insurance rates.

In addition, improper selection and placement of personnel, poor plant physical-conditions, inadequate supervision, and lack of proper personnel records not only cause accidents and high accident-costs but also result in labor turnover, poor labor relations, loss of production, and increased costs. The correction of accident causes reduces accidents, increases production, and lowers costs. Two large South Carolina mills have recently proved the truth of this statement It was neither accident nor coincidence that under the war conditions of 1944 and 1945 both the Brandon Corp. and the Graniteville Co. reduced accidents and improved production. The cause was removed, the effect followed.

One authority illustrates accident frequency by means of a pyramid as shown in Fig. 1. The one serious injury at the top of the pyramid may result from any one of the accidents at the base of the pyramid. Thus, unrecorded accidents which do not receive accident-prevention attention and first-aid treatment may cause infection, loss of time, and permanent disabilities.

MILL CASE STUDIES. In the cloth room of one finishing plant, there were about twenty-five needle punctures per month during the hand-sewing of covers on bales of cloth. The supervisor pointed out to his employees the potential loss to them from unsafe practices, and the needle punctures were reduced to an average of five per month. If the twenty-five per month average had continued, statistics show that infections and resulting economic loss would have occurred.

A few cases illustrate how other small accidents result in major losses. A woman received a thread cut on the end of one finger. It became infected, she lost her arm, the mill lost $3,500 in compensation costs and a good worker. A loomfixer's wrench slipped and his knuckle was skinned; infection caused a 50% loss of the hand and a compensation cost of

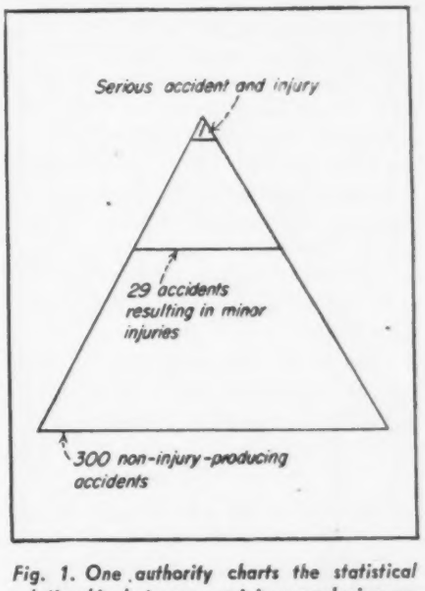

Fig. 1. One authority charts the statistical relationship between non-injury producing accidents, minor accidents, and serious accidents in the form of a pyramid. The one major accident at the top of the pyramid may be postponed, and the number of its occurrence reduced, by systematic reduction in non-injury producing accidents and in minor accidents.

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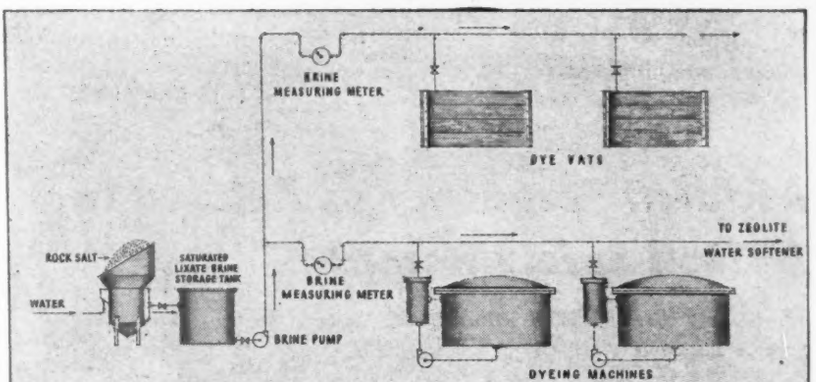

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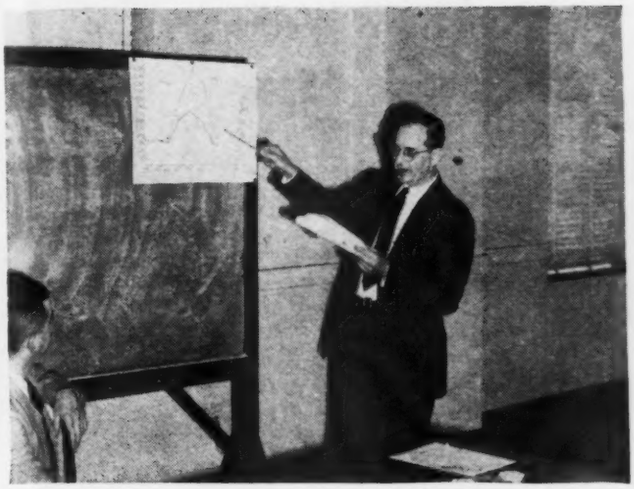
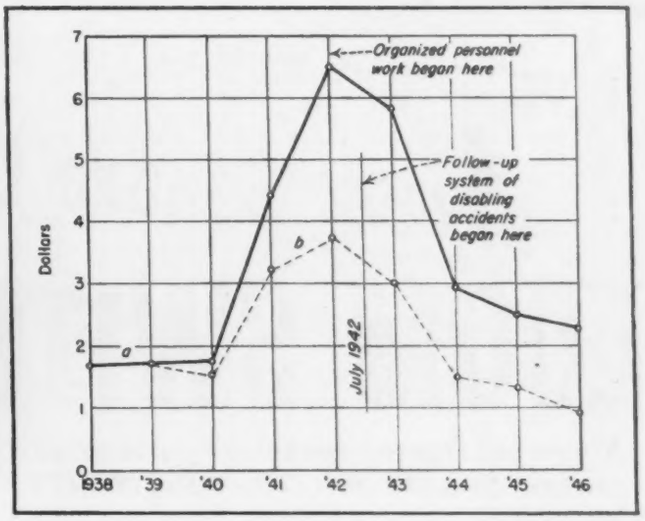


Fig. 2. A. C. Phelps, personnel director of Brandon Corp., points to the chart of Brandon's remarkable success in accident prevention. Fig. 3 (right) is a reproduction of the chart to which Mr. Phelps is pointing. Note decrease in compensation cost (line a) and accident cost (line b) since 1942.



$3,000. A box fell on a woman's foot. The foreman knew of the injury but did not send her to a doctor, and she continued to work for a month. The result was that a good employee and mother became permanently and totally disabled, and the compensation and medical cost to the employer was over $7,000. Each of these minor accidents were the most serious injuries during the employer's policy year. Surely the little accidents make big injuries.

Let us see if the same thing holds true where major injury immediately follows the accident. A roving hauler thought he was pushing his box on an elevator; instead both he and the box fell down the elevator shaft, and he was dead when the doctor arrived. The elevator gate had been left open many times before, and on each of those occasions there was a potential accident. In another case, an employee stepped on a bobbin, fell, and broke a leg. Each time a bobbin dropped to the floor, it was an accident; but injury did not occur until this unfortunate man stepped on one of the bobbins. Even the serious injury is usually the product of many small accidents. Only by striving to eliminate all accidents can the full fruits of accident prevention be obtained.

INSURANCE RATES. By determining the normal or average expected loss and adding thereto proper loadings for taxes, expenses, and profit, a base insurance rate is established for each industry. From that point on, each employer makes his own individual rate according to whether his losses are less than or in excess of the normal expected loss. The difference between a good experience and a poor experience may amount to as much as $1.00 per $100 of payroll.

In addition to your insurance cost there is still another or hidden cost which the National Safety Council has computed to be in a ratio of 4 to 1 as compared to losses. These hidden losses, which frequently are not given consideration, are comprised of damage to equipment, damage to material, loss of production, and so on. If you wish to determine your actual loss due to accidents for any given year, determine the dollars spent for compensation and medical and multiply by four. The result may be both surprising and alarming.

Since the 4 to 1 ratio was established, a new expense factor has been created, unemployment compensation. This new piece of social legislation can cost from a minimum of $1.20 to $4.00 per $100 of payroll according to the rate of labor turnover. In this instance, the differential between good and bad experience may be as great as $2.80 per $100 of payroll; and as previously pointed out, high accident-frequency and labor turnover are due to the same cause. Combining the possible savings on compensation and unemployment insurance, as much as $3.80 per $100 of payroll may be saved by the mill with proper safety programs.

Systematic Records and Follow-Up In Accident-Prevention Work

By A. C. PHELPS, *Personnel Director, Brandon Corp., Greenville, S. C.*

THE CHART shown in Fig. 3 details Brandon Mills' experience from Nov. 1, 1938, to date. The top line a represents the workmen's compensation cost per 1,000 hours worked, by years. This measure was chosen because it is one of the factors by which the work of every supervisor is judged, the factor of cost. You will note that the cost of workmen's compensation payments per thousand manhours worked was as follows: 1938-39, $1.67; 1939-40, $1.73; 1940-41, $4.40; 1941-42, $6.57. The vertical line at '42 represents the time when organized personnel work began. This consisted of systematic selection as far as manpower shortages would permit, the weeding out of the physically and morally undesirable, and the keeping of careful records of work habits as evidenced by attendance, sicknesses, warnings for poor work, etc.

Then, after the preliminary work of organizing employment, personnel system, and records was over, the accident prevention program was begun. Accident prevention, since it is mainly a personnel problem, is properly assignable to the personnel department. In July, 1942, organized follow-up of disabling accident cases was inaugurated. At that time, careful attention was paid to coordination of the work of insurance carriers, doctors, super-

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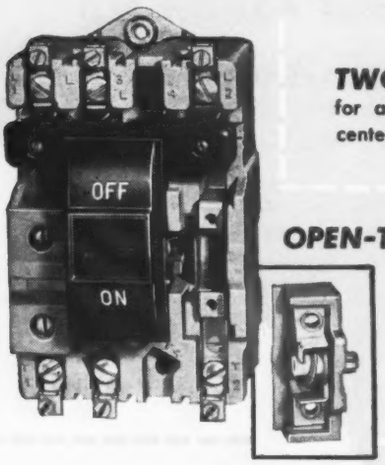
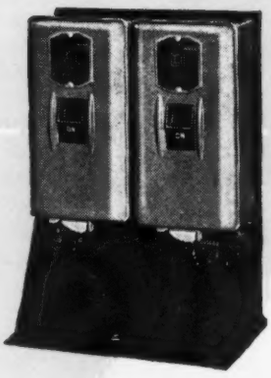


TWO-UNIT MOUNTING on existing pedestals for adjacent motors is made practical by 5" mounting centers and knockout-type mounting holes.



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1. Accidents are caused—they do not just happen.

2. 88% of the accidents are caused by human factors, 12% by mechanical factors, mainly. About 2% are unavoidable by the use of ordinary precautions.

3. The same cause that produces a relatively minor injury such as a broken finger nail may also result in a major injury such as the amputation of a finger, hand, arm, or even in death.

4. Prompt and efficient first aid is absolutely necessary to prevent infections with their train of lost time and permanent injury.

5. Certain safety rules are necessary for control of personal causative factors.

6. Decrease in accidents is invariably accompanied by increase in quantity and quality of production, by decreased cost of production in addition to decreased cost of accidents themselves.

7. The best way to engender safety consciousness in employees is to show them by positive action that you intend to remedy dangerous conditions immediately.

8. Persons failing to observe ordinary precautions or safety rules in their work should not be reprimanded in such fashion as to engender resentment, but such persons should be sold upon the value of safe working habits to themselves, their families, and other workers; on the other hand, persons who resist this process unduly simply have no place in the organization.

9. Some persons are naturally accident prone, because of lack of judgment, physical factors, or poor habits. These persons must be eliminated.

10. Accident prevention is definitely an every-minute part of the production routine and is the natural responsibility of each supervisory person.

11. The time to investigate any accident is as soon as possible after it occurs, before recollections have a chance to change.

12. While efficient production is the end of any industrial organization, safety in production must be its policy if operations are to continue successfully over long periods of time.

13. The pronouncement of policy in safety is a function of top management, and final responsibility for each injury rests upon the same.

14. Supervisors are entitled to systematic and accurate records and analyses of company policy from the staff organization as an aid to production and accident prevention.

15. The most efficient way to conduct any operation is invariably the safest way. Therefore, study of processes or operations by the staff is necessary in order to further efficient and safe production.

Fig. 4. The fundamentals of good accident prevention policies were formulated by Brandon Corp. as shown above.

visors, and investigators. The main object of this was to eliminate as far as possible faked injuries and exhorbitant claims, of which there were many. Along with this program went training of supervisors in their part of the investigation and follow-up of accidents.

GROUND WORK. The first part of the program was mainly designed to rebuild the confidence of supervisors in higher executive backing on accident investigation. Otherwise, they were bound to feel that preventive measures were of small import. Why prevent accidents when any worker could fake a claim and collect, or collect twice or three times the going legal rate for actual injury? And this part of the program did bring immediate results. For the year 1942-43, compensation cost per thousand manhours fell from $6.57 to $5.79, or 12%, despite a wage rise of 15.4%. It should be noted that the average weekly wage determines the dollars and cents paid for a specific injury. For example, the loss of a thumb obtains 60 weeks of compensation. Therefore, an average weekly wage of $20, which gives a compensation rate

(Continued on page 232)

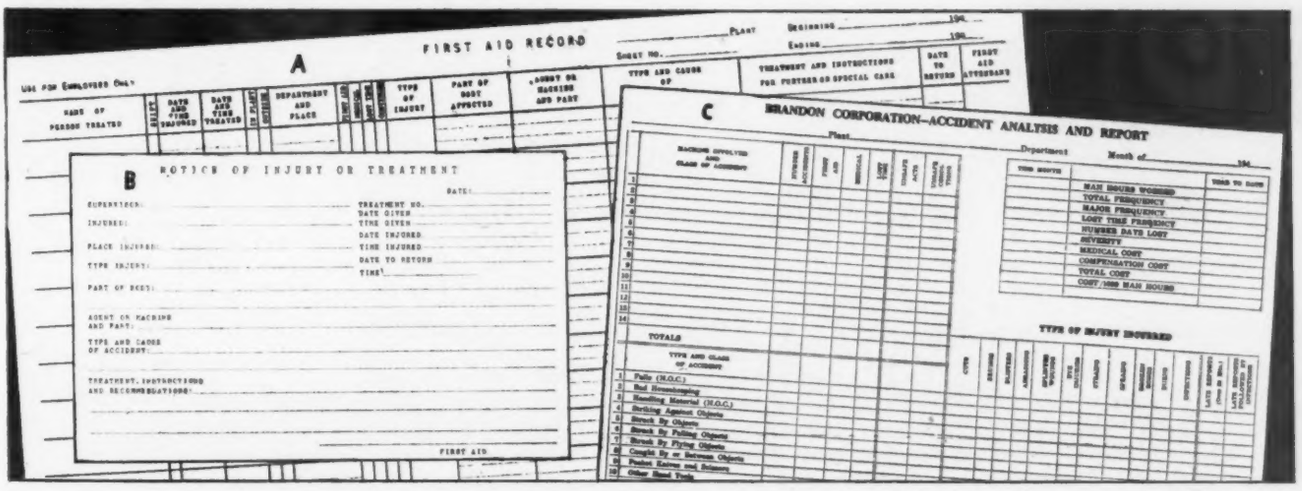

Fig. 5. The complete system of accident reports as used at Brandon Corp. follows: (1) the first-aid record, A, is compiled from information given by the worker himself during the first-aid treatment; (2) a copy of the information, B, is forwarded to the supervisor of the worker; (3) on the reverse side of the form the supervisor describes the accident and cause from information which he obtains at the source of the accident; and the two reports are checked for discrepancies which may affect possible claims for compensation; (4) accidents are analyzed, C, by department monthly, and detailed cost figures are shown. Comparisons of the monthly averages give good check upon the efficiency of the accident-prevention program in effect.

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ACETATE SLASHING
Often Wasteful of Materials

HIGHLIGHTS: *Basically, only three materials are needed—Two simple tests can aid in arriving at formula for specific yarn—Finish on yarn affects sizing—Improper wetting out and overheating can impair effectiveness of gelatin size.*

By I. G. SANFORD

MUCH HAS BEEN LEARNED about the slashing of acetate rayon in the last few years, during which time regular materials were often difficult if not impossible to get; and continual experimentation had to be made to reduce the amount of materials used and to find substitutes for scarce or unobtainable materials.

One of the first things which was found out was that the amounts of gelatin used were frequently much higher than were absolutely necessary for good-running warps. In many instances, the amount of gelatin used would have been far too much for good-weaving warps if high amounts of softeners and other materials had not also been applied to kill the effect of the excess amount of gelatin. There had been a vicious cycle of ever-increasing amounts of gelatin which demanded ever-increasing amounts of softeners and greater quantities of (or stronger) penetrants.

Formulas generally resulted from trial-and-error practice, rather than from a consideration of basic principles. Successful slashing formulas were often considered the stock-in-trade of preparatory supervisors, and, in many instances, formulas from one mill were carried to other mills with or without the permission of the originator of the formula.

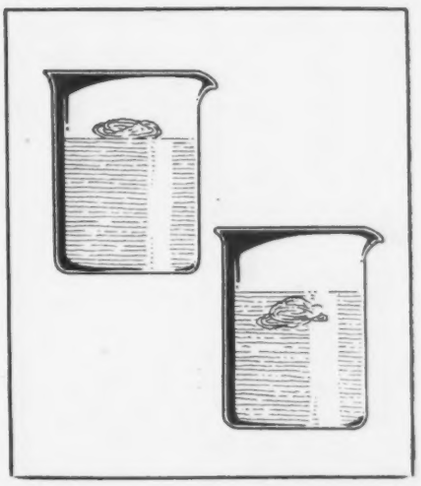
Actually, the principles involved in slashing acetate rayon are quite simple: A protective film must be applied to the yarn in such a way that it does not shed off; and it must have sufficient flexibility so that the warp will withstand the flexing in weaving as well as the chafing of the drop-wires, heddles, reeds, and perhaps shuttles.

For a good size, therefore, three ingredients are needed—a material to form a film, a material to modify the film, and a material to cause the film to adhere to the acetate yarn, which is relatively resistant to aqueous solutions. The problem of adhesion is not very great in viscose-rayon yarns, which will readily absorb up to their own weight in moisture, as compared to acetate-rayon yarns which will readily absorb up to only about half their weight in moisture.

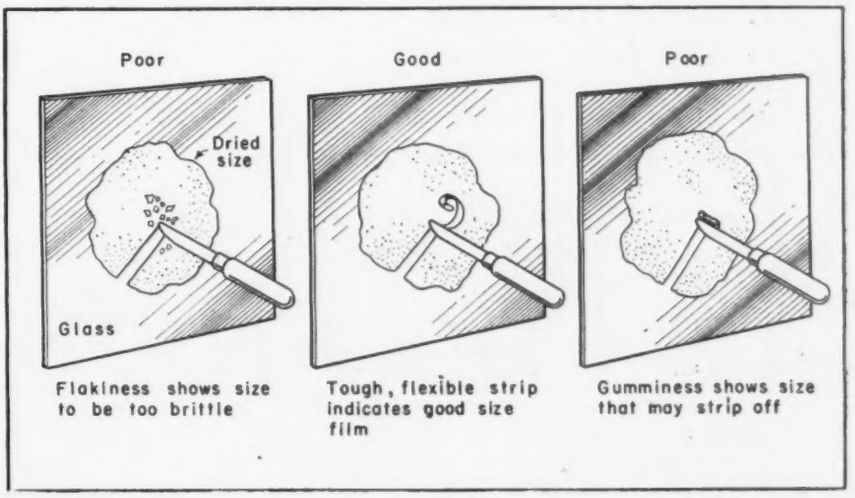
GELATIN STANDARD. There are many materials which can form the necessary film on acetate yarn during slashing. Years ago, starches were tried; but they could not be continued because of the difficulty in removing them. Gelatin is the material which has been used in the largest amount, although lately much modified casein has been used successfully, and a little polyvinyl alcohol. Many other materials have been tried; but since gelatin is the standard size used in most mills, it is the only film-forming material which will be considered here.

There are many different grades of gelatin which can be used for slashing rayon, ranging from the technical glues through to the edible gelatins in a wide range of gel strengths and viscosities. The writer has used technical glues (or gelatins) with a gel strength ranging from 160 to 500, but has found that the range of 225 to 375 is generally best. (Unfortunately, there is some discrepancy between gel strength of gelatins sold by different manufacturers, and very little attention has been paid in the past to viscosity.) Gelatins vary considerably; but since

(Continued on page 244)



Sink tests consists simply of placing small wads (120 yd.) of yarn to be sized in beakers of solution maintained at the temperature at which the solution is to be used, usually 140° to 150° F.



Films are tested by allowing solutions to dry on panes of glass after which they either are peeled off by hand or scraped with a knife as shown.

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COTTON Will Survive Say C.T.I. Speakers

HIGHLIGHTS: *Cotton-Textile Institute marks 20th anniversary—More normal markets are seen just around corner—Comer links cotton and staple fiber in bright future—Economists gloomy on near future, but foresee 1948 to 1950 textile output as 50% over 1939.*

OPTIMISM FOR THE FUTURE tempered by caution for early 1947 was the view of several economists and others who spoke before the annual meeting of the Cotton-Textile Institute at the Waldorf-Astoria Hotel, New York, Oct. 23 and 24.

The cotton price break was in the forefront and Dr. Claudius T. Murchison, president of C.T.I., had this to say of that situation: "The spinning and weaving divisions of the cotton-textile industry are not in the business of cotton manufacture for any speculative purpose. Their business is to manufacture goods for sale. The cotton mills are now chewing up cotton at the rate of 10 million bales a year, as against a prospective cotton crop of only 8.7 million. This alone should be assurance enough that the cotton mills are doing their part in the maintenance of a strong cotton market and satisfactory prices for the farmer. The implication is evident that any substantial break in the cotton market this year can scarcely be more than temporary. At the same time, the incident carries its legitimate warnings to those whose speculative proclivities are too pronounced.

"The industry is now entering a stage of normal market competition and normal consumer behavior," went on Dr. Murchison. "Consequently its motives must be positive. In the recent past we have been told what to produce and to get it out irrespective of what it was. From now on production will be determined by the choices of the consumer. Prices will revert to their honorable function of determining what should be produced and how much."

P. K. Norris, principal marketing specialist of the Office of Foreign Agricultural Relations, U.S.D.A., analyzed the cotton supply situation and found it ample. He said quite frankly, "It doesn't look like a cotton famine to me." He finds plenty of cotton in the United Kingdom, parts of Europe, and China and observes that a surprisingly small amount of textile equipment was destroyed as a direct result of the war. He estimates a world carryover of 15 million bales next July 31 and a domestic carryover of 4 million which, though less than recent years, is not out of line with carryovers of earlier years.

OPTIMISM FOR THE FUTURE. Hugh M. Comer, of Avondale Mills, chairman of C.T.I. board, traced briefly the history of the institute on this occasion of its 20th anniversary. He spoke optimistically on the brightness of cotton's future and linked it with the bright future of rayon staple fiber, calling them "our two fibers." He praised the progress in chemistry and said that the industry was ready to accept unspun yarn and unwoven fabrics. He stressed the field of labor relations as one where research could be most fruitfully applied. "How does your community like your company?" was the $64 question he asked.

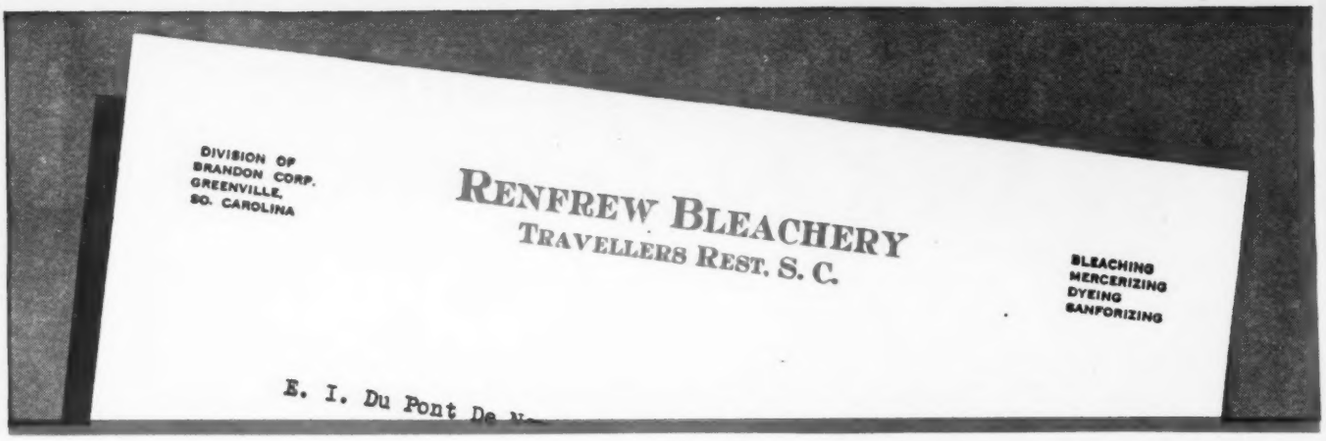
Kenneth R. Fox, president of Lowell Textile Institute, spoke on textile trends and the growing importance of end-use engineering. His formula is: (1) define the problem; (2) collate and analyze the data; (3) make the product. He said that there were at present 2,700 students in textile colleges. He outlined briefly the newest textile achievements under three heads: (1) new and modified fibers; (2) new methods of mechanical processing; (3) new finishes. Under processes, he touched on the making of worsted yarn on cotton machinery and explained that it might well be called the "American" system in distinction to the English and French systems. [One of the early published references to this system as the "American" was on page 123 of TEXTILE WORLD for March, 1946, in a descriptive article by Francois Cleyn.]

• On an experimental, 100% mechanized farm, cotton has been raised at the cost of 8¢ per pound, according to Hugh M. Comer, speaking before the annual meeting of C.T.I. This cotton, he explained, can compete with synthetics and in the export markets of the world. He said that this machine-raised cotton required the expenditure of 8¼ man-hours per acre against the Dept. of Agriculture's estimate of 235 man-hours per acre for cotton raised and harvested by hand labor. Mechanization, said Mr. Comer, frees us from the competition of the low-wage countries.

CPA Administrator John D. Small told the audience what he regarded as the pre-requisites of decontrol. "If I knew that the basic needs for agricultural, industrial, and apparel fabrics would be met without any government controls," he said, "I would not hesitate for an instant to recommend lifting those controls immediately. However, I cannot help recalling what happened just after V-J Day when we did curtail M-317A and L-99. Immediately there was production of mountains of chenille bedspreads, upholstery fabrics, shower curtains, draperies—everything except low-price print cloths and other staple fabrics. So CPA was forced to reinstate some of the controls it had dropped. The best possible way you can convince the American people and their government that textile controls are no longer needed is to produce and sell a maximum amount of the fabrics we need most. Production and proper distribution are the only real answer to the shortages that have plagued us since the early war days. And they are the surest and quickest way to get rid of government controls."

ECONOMISTS PESSIMISTIC. Among the economists, Stacy May, of Radio Corp. of America, said, "It is my conviction that we are facing the prospect of a business recession, probably within the next few months, and not later than next spring. It should not be a recession approaching the magnitude or duration of that which followed the

(*Continued on page 224*)



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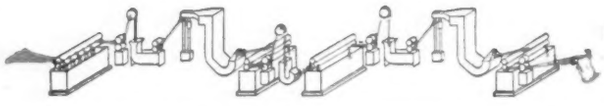

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United States KNITTING Trails British, Report Discloses

HIGHLIGHTS: *Full-fashioned knitting called good, but underwear and outerwear sections are scored—Lack of air conditioning, humidification, good lighting, and materials handling stressed—Waste said to be excessive —Work loads claimed not scientific.*

By LEONARD HORN

Lack of air conditioning, good artificial lighting, and materials handling, which the recent British delegation reported, is evident in this knit-goods finishing department.

BRITAIN'S SOCIALIST GOVERNMENT sent over a "Working Party" delegation last February to "examine, compare, and report upon the methods of production, organization, and distribution of the hosiery and knitwear industry in North America, and to review the possibilities of increasing exports from Great Britain thereto."

What this delegation reported is in marked contrast to the reports of two previous delegations sent over to take a peek at the cotton and rayon divisions of the industry. English manufacturers were frankly told by the two earlier delegations to wake up to their own deficiencies and emulate the techniques and efficient production methods of their opposite numbers in the U. S. [See T. W. Jan. '45, p. 82 and Sept. '45, p. 141].

The delegation that came over to look at the hosiery and knitwear divisions of the industry, by contrast, saw little to learn here, except in the full-fashioned section. Even some aspects of that section failed to receive the fulsome praise heaped, in general, on the American cotton and rayon divisions. As for the underwear section, the delegation was more than mildly critical, while it was downright caustic about the outerwear branch.

Full credit is given to women's full-fashioned hosiery mills for the excellence of workmanship, which is generously admitted. There were two aspects in which American full-fashioned knitting is distinctly ahead of the British: (a) in the close inspection which is made of the goods at all stages of manufacture, so as to detect faults at the earliest moment, (b) the apparent economy of labor used in the supervision of machines. It was revealing to see one mechanic attend to 30 or 40 machines. The delegation attributes the good running of American machines partly to the more selective training of the operative in the U. S., compared with Britain.

FINE GAGES. As regards the machines used in the hosiery industry, the delegation was struck by the fact that the development is exclusively toward finer gages, mostly 51 gage of 30 sections, and also by the fact that the process of conversion of old 42 and 45 gages into 51 gages was very far advanced. The head start which the American industry has had over the British in modernizing equipment made the delegation rather pessimistic about Britain's chance in world markets if it comes up against the competition of American full-fashioned hosiery manufacturers.

On this, the British are almost willing to concede defeat before they have begun to fight. Says the report, "We are assured from all evidence taken that unless speedy action is taken in Great Britain to develop the production of fully fashioned machinery, the prospect of taking a place in world markets for this type of production will be delayed for at least 10 years; and it might well be, at such time, too late to attempt to capture such markets."

One criticism made of American plants—and this applies to the hosiery

(Continued on page 200)

Plants visited by the British Delegation to U.S.A. to observe American practices in the hosiery and knitwear industry are listed below.

Knitting Mills Visited

Philip Knitting Mills	*Globe Knitting Works*	*Adams-Millis Corp.*
Rudolph Knitting Mills, Inc.	*Berkshire Knitting Mills*	*O. E. Kearns & Son*
Little Falls Mfg. Co.	*Infants Socks, Inc.*	*Interwoven Stocking Co.*
Waterville Textile Mills, Inc.	*Nolde & Horst Co.*	*Tudor Knitting Mills*
Fort Schuyler Knitting Co.	*Holeproof Hosiery Co.*	*Vogue Knitting Co.*
	Phoenix Hosiery Co.	

Machinery Makers Visited

Textile Machine Works — *Wilcox & Gibbs, Inc.* — *Singer Sewing Machine Co.*

The delegation also visited eight of the country's largest department stores.

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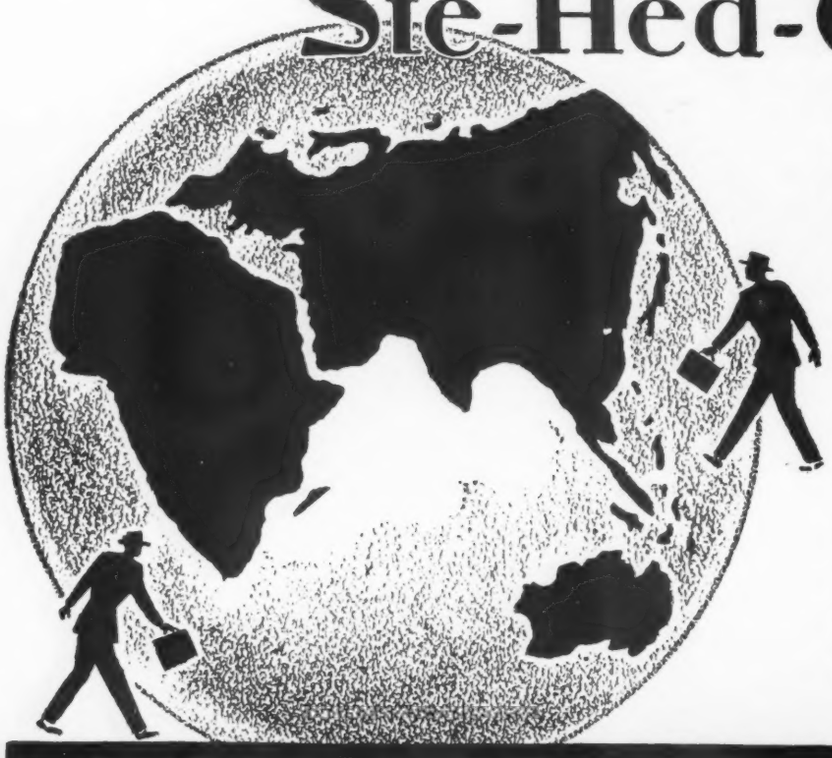

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Three Methods Available for RAYON STABILIZATION

HIGHLIGHTS: *Formaldehyde, caustic, and glyoxal processes can be used—Crease resistance attributed to urea and melamine treatments—Quick neutralization should follow caustic treatment — Bleaching, when necessary, follows glyoxal procedure.*

Control of shrinkage and crease resistance of viscose-rayon fabrics was discussed by H. F. Creegan, of American Viscose Corp., at a recent meeting of the Philadelphia Section of American Association of Textile Chemists & Colorists. There are three general methods which may be used by the textile finisher to obtain viscose-rayon fabrics which show a reasonably permanent, low residual shrinkage. Each process has its advantages and its limitation. It seems that each process has a place in rayon finishing and that any finisher should be acquainted with all three. Reported here is an abstract of Mr. Creegan's paper.

THE FIRST and best-known method for shrinkage control and crease resistance of rayon fabrics is by the application of synthetic resins of the thermosetting type: urea formaldehyde and melamine formaldehyde resins are the two resins used. Both of these resins are applied to the fabric from water solutions of the monomer, or precondensate, form in the presence of a catalyst which will split off acid at the high temperature used for curing. Formula I, as given, is of sufficient strength to give crease resistance if properly applied, and even in lower concentrations will yield fabrics of low residual shrinkage. Melamine formaldehyde is made up for use in the same way as urea formaldehyde. Formula II, as given, is calculated to be of sufficient strength to give crease resistance. Dilution of this same solution by one-third will still give shrinkage control.

The steps in the application of these resins to viscose-rayon fabrics are: padding on the resin, drying, curing, washing, and final drying and finishing. The immersion time at padding should be sufficient to allow thorough wetting out. Pad pressures should be sufficient to insure a good squeeze, an expression of 75 to 80% is considered satisfactory.

The finisher should bear in mind the relatively poor keeping qualities of both the resin as purchased and of the solution made from this resin for padding. There are several ways in which the instability of the resin solution can be minimized. One is to refrain from adding the catalyst to the solution until everything is set to go ahead with the run. Another is to keep the solution as cool as possible by the use of an ice packing around the mixing tank or by the use of a water jacket or cooling coils.

The drying operation, following padding on of the resin solution, is an important phase in the process. Warp tension should be held to an absolute minimum by drying in a loop or Airlay dryer. The overfeed pin tenter, which is always used in England for drying on of resin applications, is a desirable machine. It is believed that the best conditions for drying are at low temperatures, preferably in the neighborhood of 180° F., with 200° being a maximum temperature.

Following drying, resin-treated fabrics must be cured to achieve polymerization of the resin monomer to the insoluble form. Although curing for 5 min. at 300° F. is a good all-round procedure to follow, the best conditions of time and temperature for curing should be determined by each mill, for each fabric.

WASHING. The last step before final drying is to wash the cured fabric to remove excess chemicals and surface resin. This is best carried out in the

(*Continued on page 236*)

Formula I

Urea formaldehyde (dry)	30.00 lb.
Diammonium phosphate (catalyst)	1.20 lb.
Wetting agent	0.25 lb.
Water to make	12.00 gal.

The urea formaldehyde precondensate is dissolved in 4 gal. of hot water, previously heated to 180° F. When thoroughly dissolved, 35 lb. of cracked ice should be added to cool the solution as quickly as possible. The wetting agent is then added and the mixture diluted to 11½ gal.

Formula II

Melamine precondensate (80% solids)	16.00 lb.
Diammonium phosphate (catalyst)	0.48 lb.
Cold water to make	12.00 gal.

The resin and the catalyst are dissolved separately and then mixed; the mixture is brought to 12 gal. with cold water. A wetting agent may also be used if the fabric is particularly difficult to wet out.

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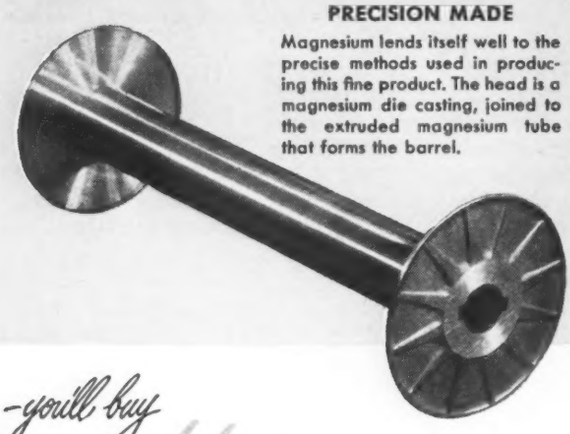

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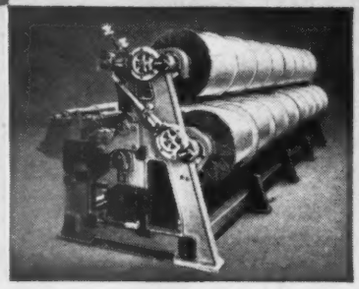
Magnesium lends itself well to the precise methods used in producing this fine product. The head is a magnesium die casting, joined to the extruded magnesium tube that forms the barrel.



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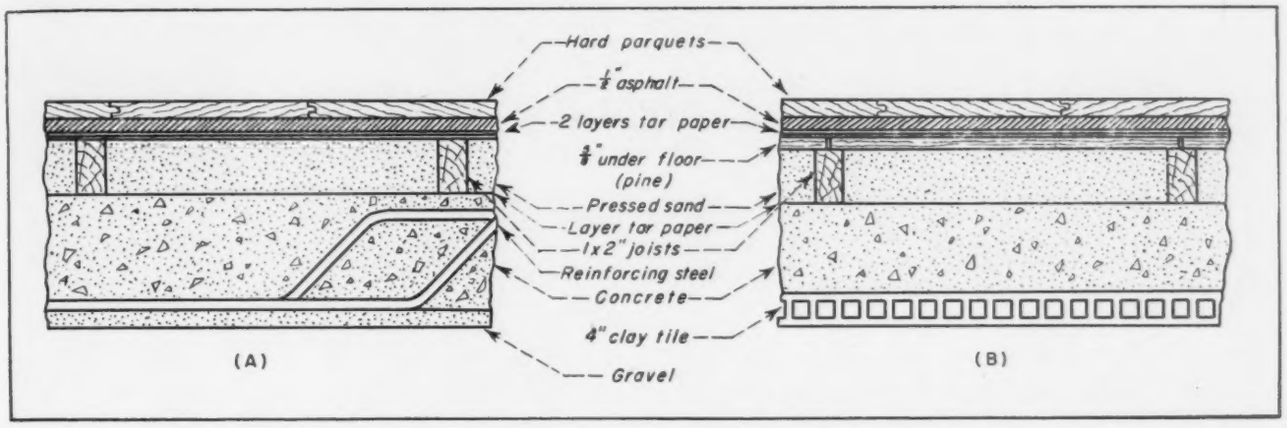

Fig. 1. Impregnated-oak parquet floors, when laid as shown here, provide clean, warm, long-wearing surface. (A) Steel reinforcing in concrete base is usually advisable; (B) in humid or soggy areas, hollow tile beneath concrete will drain away excess moisture.

Wood-Asphalt-Concrete Sandwich Answers MILL FLOOR Problem

HIGHLIGHTS: *Ideal mill floor must be "foot-warm," easy to keep clean, sturdy, and long wearing—Wood floor laid on asphalt and concrete said closest ideal for dry-processing rooms—Cement or glazed-tile floor called best for wet-processing departments—Rubber-tired truck wheels are necessary when using wooden floors—Heat loss through ground floor of basementless mill depends largely on humidity content of ground.*

By PAUL L. GEIRINGER, *Professional Engineer*

DURING THE LAST HALF CENTURY, the processing of cotton and wool fibers has perhaps not changed so much as has design of textile factories. During this period, the problem of selecting adequate flooring for the different parts of textile plants has caused many headaches. A properly constructed floor must satisfy the following conditions:

1. It must be "foot-warm." This means the operator should not get cold feet while standing on the floor.
2. The surface must be bright, easy to keep clean, and hygienic.
3. The floor and its structural supports must be hard and sturdy in order to support the machinery solidly, but still must be somewhat anti-elastic so that machine vibration is damped out and not enlarged.
4. The floor must be hard enough to withstand the abrasive effect of truck wheels, but must be elastic and soft to reduce the strain on the operator who walks many miles per day on the floor.

It appears to be very difficult to satisfy so many different contradictory conditions. After reviewing the many methods which have been tried during the last fifty years, we may conclude that the solution is not too simple.

FORMER PRACTICE. In the past century here, as well as in England and Europe, wooden floors were principally used. They consisted of one or two layers of soft or medium-hard wood laid across wooden beams. Using such floors, the abrasive effect of truck wheels required much maintenance; vibration was high; the light shoes of operators were often torn by splinters; and there was fire danger from the wooden construction.

The last consideration, especially, accelerated the introduction of concrete structures and concrete flooring for textile plants. Everybody hoped to reduce maintenance to practically nothing by using such monolythic floors; but, after a couple of years, holes and cracks developed. At first, it was thought that this could be avoided by improving the quality of workmanship and by increasing the admixture

(*Continued on page 194*)

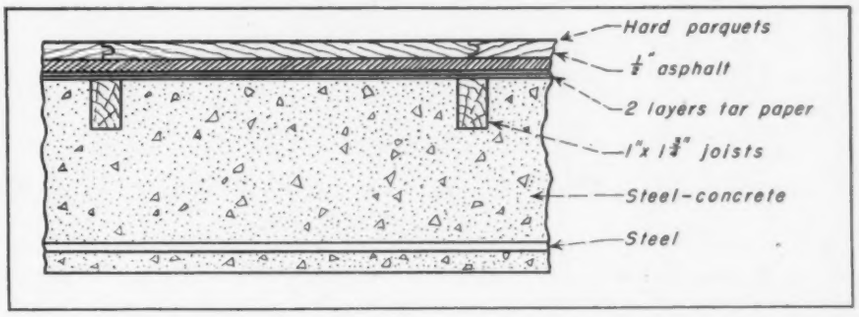

Fig. 2. Simpler and cheaper method of laying parquet floor is to sink wooden joists into concrete base, saving layer of sand and one layer of tar paper. This floor is neither so warm nor so elastic as that shown in Fig. 1.

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It is an excellent all-purpose detergent, for application on any knitted or woven fabric; works well for scouring, bleaching, dyeing and soaping off.

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Spinning Imparts Linen Characteristic to SPUN STAPLE

HIGHLIGHTS: *Flyer spinning gives smoother, more linen-like yarn than ring spinning—Overhung flyer frame recommended—From 4- to 6-in. rayon staple may be used—Twist factor of 1.7 or 1.8 is customary—Slip-draft mechanism adaptable—Standard flax wet-spinning frame may also be used.*

By S. A. G. CALDWELL

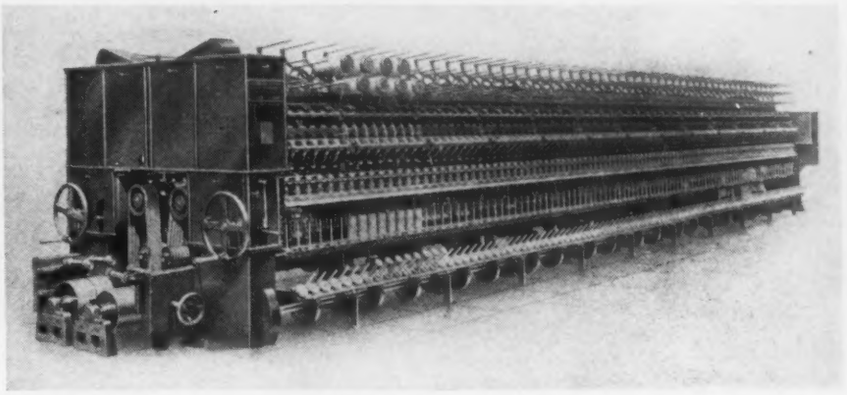


Fig. 1. Overhung-flyer frame of modern design suited for spinning staple fiber with linen characteristics.

THE SPINNING PROCESS is mainly accountable for imparting the characteristic unevenness that is a feature of linen-type yarns. This is the result of the length of reach necessary to draft the long-staple fiber, and of the irregularity in staple length consequent to carding and gilling.

The spinning of long-staple yarns for the production of linen-type rayons is being developed along two channels. For quality yarns, flyer spinning produces a much smoother product; the yarns stand out individually in the fabric as in linen. Yarns produced by ring spinning are much more hairy in appearance and lose their individuality in the fabric, the surface of which is neppy and rough. Ring spinning can be carried out on the standard type of frame, provided the reach is suitable for the staple of fiber being spun. [For drawing and roving, see article on page 125, T. W., Aug., 1946; for carding, page 145, T. W., April, 1946.]

Developments in design of the overhung-flyer frame with automatic doffing mechanism have overcome the two main objections to flyer spinning—small yarn package and low working efficiency. With the yarn-twisting and building mechanisms operating as two independent units, the problem of obtaining smooth running at high speeds with the flyer and yarn package carried at the extremity of a long, positively-driven spindle is eliminated.

On the overhung-flyer frame, the flyers are mounted on a rail above the spindles. The latter are of the "dead" type, with the yarn package supported on a carrier plate which rests on friction disks of suitable composition and dimensions to impart the required drag to the yarn in spinning.

With a spindle mechanism of this type, the capacity of the yarn package may be increased considerably over that possible with the older type of frame, the drag being tempered to the count and quality of the yarn. When spinning staple-fiber yarns on frames of this type, which were originally designed for flax or jute, failure to obtain efficient results is invariably due to the use of unsuitable dragging mechanism. The considerably lower and more uniform tension required for rayon-staple spinning necessitates the use of special friction disks (usually of metal) to obtain the requisite tension.

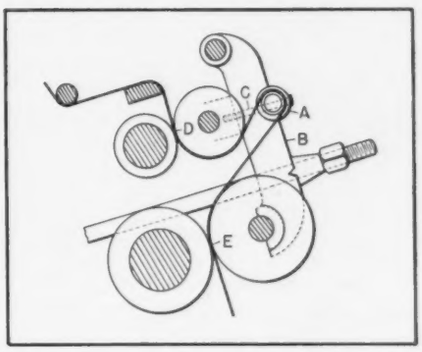


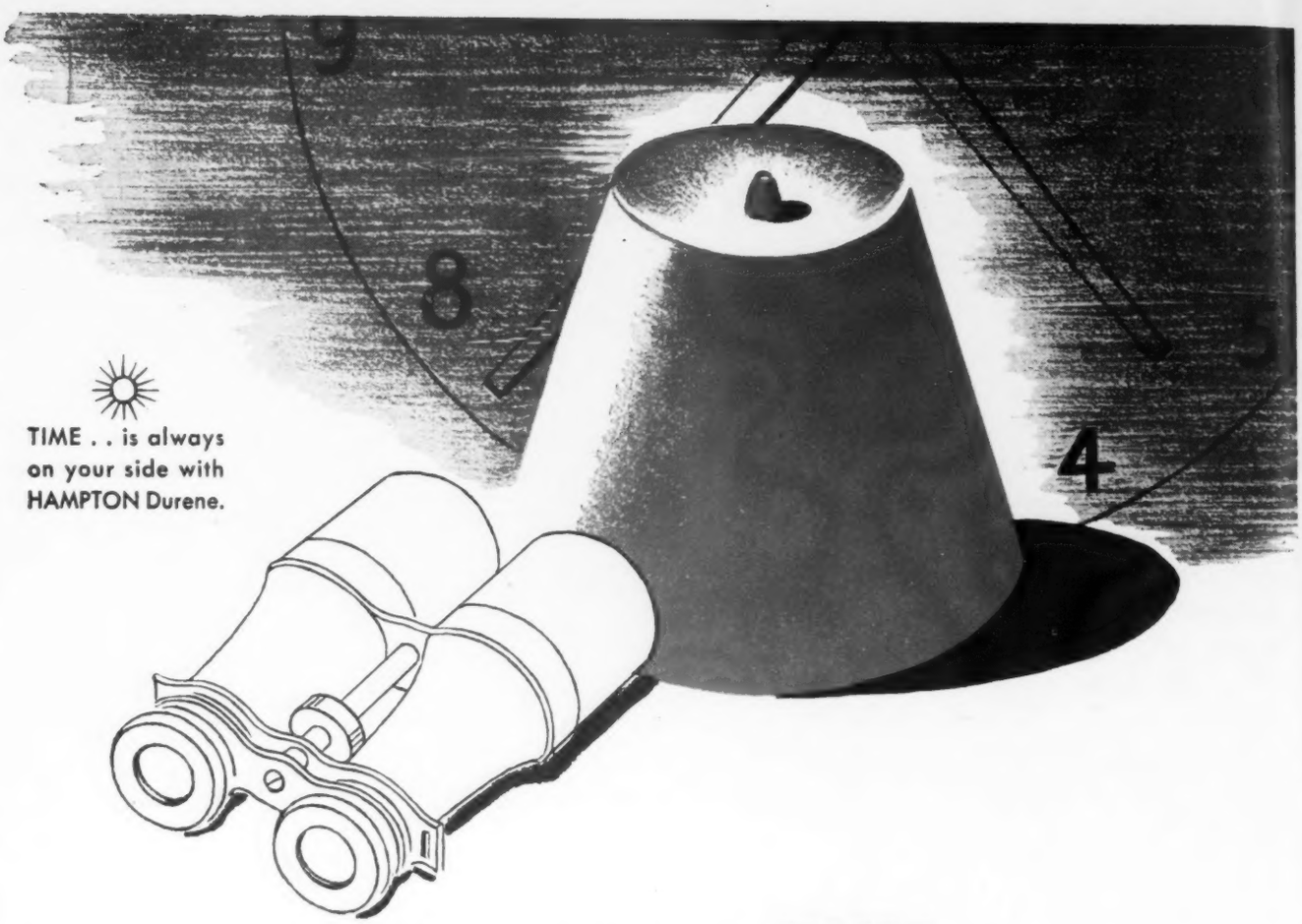
Fig. 2. Attachment for roller saddle of wet-spinning frames to permit handling fibers longer than maximum frame reach.

FLY FRAME. Fig. 1 illustrates an overhung-flyer frame of modern design, made by Fairbairn Lawson Combe Barbour, Ltd., of Leeds and Belfast, which is now being used extensively in Britain for the production of linen-type rayon yarns from stapled material. The frame is of the dead-spindle type, with a double-surface bobbin-drag on which adjustment can be made during spinning.

The flyers are fitted with patent offset eyes, and each flyer is carried on two ball-bearings arranged in dust-proof housings. They are tape-driven in sections, each section being provided with a tape-tensioning arrangement which insures uniform twist insertion. An automatic roving stop-mechanism is also supplied.

Doffing of the full yarn packages and the replacement of empty bases into the spinning position for filling are effected by means of a circular disk revolver-motion which receives the builders during the doffing operation and places them in their respective positions by the operation of a hand wheel. In the doffed position, the filled bases are inclined forward toward the operative, so that packages may readily be removed from the spindles and replaced by empty bases. When this is done, the motion is reversed and the empty bases rest in the appropriate position to replace the full packages at the succeeding doff.

(Continued on page 204)



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Plain and Reverse Plating Are Versatile KNITTING STITCH

HIGHLIGHTS: *In plain plating one yarn is on face, another on back —Reverse plating reverses position of those two yarns at controlled points thereby creating pattern effects—Angle of yarn feeding is important—There are four customary methods to effect reverse plating.*

By HARRY WIGNALL
Leicester, England

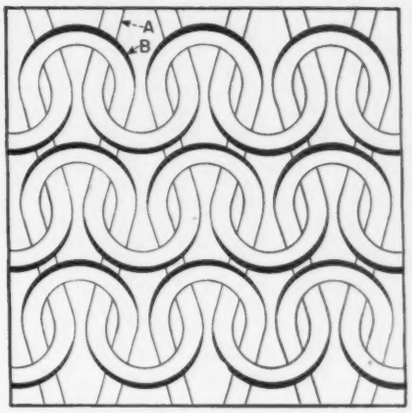

Fig. 1. Plain plated fabric.

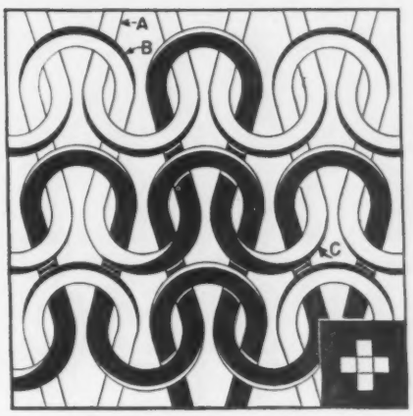

Fig. 2. Needle-deflection plating.

PLATING may be described as the production of a knitted loop using two or more yarns in such a manner that only one yarn shows on the face. In plain jersey, plating is used either to cheapen the fabric while retaining its appearance, to add ornamentation, or to combine the best properties of two fibers in one fabric.

In plain jersey fabric, the face yarn almost completely covers the backing yarn over the entire surface of the front of the material. In 1x1 rib fabric, the face yarn shows to the front of both sides of the fabric when normally contracted; the backing yarn occupies the rear of the wales and is visible only when the fabric is subjected to lateral tension. In broad-rib fabrics, the two yarns appear in the form of vertical stripes since the structure of the material is such that the backs of the wales are not completely hidden. The 1x1 purl fabric behaves somewhat differently, the effect being that of single-course horizontal striping.

PLAIN PLATED FABRIC. Fig. 1 shows structure of a plain jersey plated fabric as it would appear when seen under a microscope. The loop structure is diagrammatic to illustrate the technical formation of the loops. Although it is generally true that the fabric is produced with one yarn showing only to the front and the other showing only to the back, perfect results are difficult to obtain. The best results are obtained with the following conditions: (1) The face yarn is thicker than the back yarn. (2) The face yarn has superior covering properties. (3) Any other special properties possessed by either yarn must assist plating.

The loop-forming mechanisms commonly used to produce plain plating are illustrated in Fig. 3, *A* and *B*, and Fig. 4, *A* and *B*, and will be more fully described in the section on reverse plating. Good plating is difficult to obtain and is dependent on specially calculated yarn-feeding positions, accurate and suitable tension on yarns, proper design of loop-forming elements, and perfect timing.

In Fig 1, the yarn *A* shows to the face of the fabric and yarn *B* to the back, the uneven covering of the back yarn by the face yarn is exaggerated; but, as explained previously, some slight lack of cover is nearly always experienced.

The chief mechanical requirements for producing plain plating follow:

1. Angle of yarn feeding—this determines the position of the yarns on the needle stem or in the needle hook; and, for plain plating, the angle should never fall below 20°.

2. Yarn positions on stem or in hook—the yarn fed nearest to the needle head or nearest to the front of the needle hook will occupy a position at the back of the fabric.

REVERSE PLATING. The term "reverse plating" is used to describe knitted fabrics produced by using two or more yarns on a plated basis, the position of the yarns being reversed during loop formation in accordance with the design required. Normally, plating is carried out by feeding the yarns to the needles in such a manner that they are at different distances from the front of the needle hook or the needle head. Reversing the position of the yarns by any means at all will reverse the yarn positions in the finished loop.

Fig. 2 shows a small section of a reverse-plated fabric and its pattern draft. The plain yarn *A* and shaded yarn *B* are shown in their respective positions in accordance with the pattern draft. Where the yarns are reversed there is a crossover, and this effect is shown at *C*. Reverse plating can be produced on either the needle wale or the sinker wale. The diagram shows reverse plating on the needle wale. If the diagram is held upside down, it will obviously represent reverse plating on the sinker wale.

FOUR REVERSE METHODS. There are four methods of producing reverse plating. Descriptions follow:

1. *Needle Deflection:* Fig. 3 shows how the yarn position is changed by needle deflection. In both the forward and deflected positions, the inside of the needle acts as a cam to guide the yarns to their respective positions. With specially designed forward-plating-hook needles, fairly good results are obtained. Fig. 3, *A* and *a* show the feeding and ultimate position for normal plating. Fig. 3, *B* and *b* show the needle deflected and the position of the yarns in the hook therefore reversed. This method results in reverse

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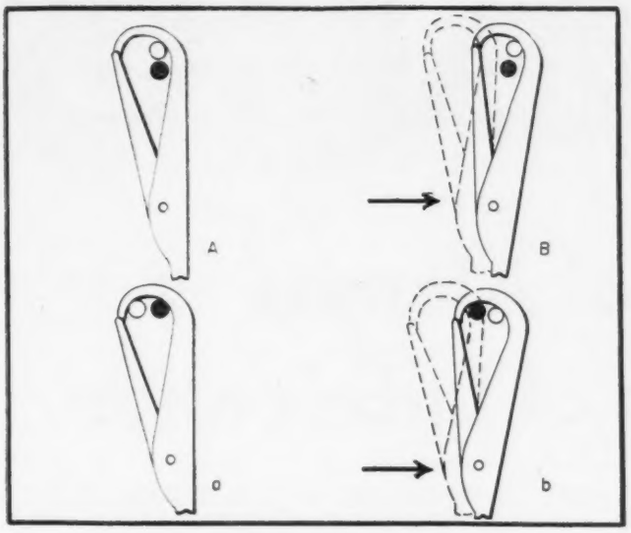

Fig. 3. Needle-deflection plating.

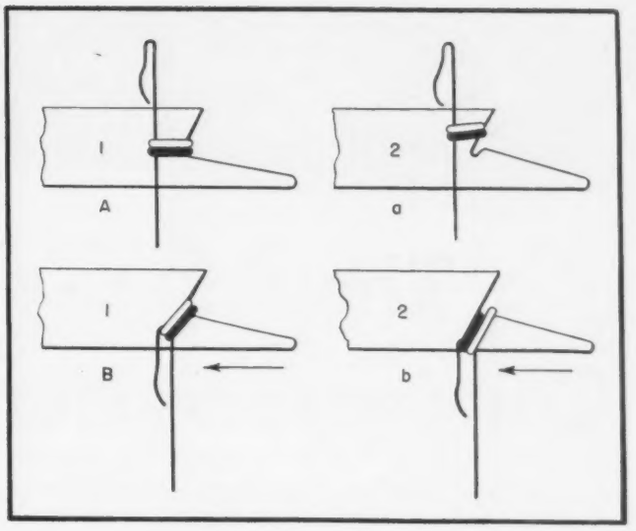

Fig. 4. Sinker plating.

plating the needle wale as shown in Fig. 2. The movement is given to the needle by instruments actuated by levers and jacks from the pattern drum. The designing scope is considerable, and many attractive patterns can be produced.

2. *Sinker Reverse Plating.* The general principle of reverse plating on the sinker wale is shown in Fig. 4. Plain plating would result in A and *B* of that drawing. The positions of the yarns are not reversed and the white thread would occupy a position at the back of the fabric. Fig. 4, a and *b*, it will be seen that the sinker is of special design which results in the yarns changing their position during loop formation. The white thread would now occupy a position at the front of the fabric. The loop-forming elements shown in this diagram can obviously produce only vertical stripes, but the principle holds good for all high-speed, sinker-reverse-plating machines of modern type. By means of specially designed sinkers controlled by patterning mechanisms, effective designs can be produced. For good results, suitable yarns must be used; and movements of sinkers and needles must be accurately timed.

3. *Positive-Change Reverse Plating.* Fig. 5 shows how the position of the yarns can be changed by positive means. Drawings A and *B* of that figure show the arrangement for producing plain plating. It will be noted that the instrument *C* pushes the black yarn to the front of the needle hook, and so it occupies a position at the back of the fabric. Drawings a and *b* show how the instrument *c* can hold the black thread to the rear of the needle hook during loop formation, thus insuring that the black yarn will occupy a position at the front of the fabric.

This method can be adapted to the production of three-color reverse plating. In such a case, the yarns are fed at different angles and positively manipulated during loop formation for selection of the required color to show on the face of the fabric.

4. *Yarn-Guide Manipulation.* Correct plating depends to a large extent on the relative position of the yarns when being fed to the needles. On fairly coarse machines, it is possible to feed the two yarns into the latch-needle hook so that one yarn occupies a position at the front and the other at the rear. On fine machines and all spring-needle machines, the yarns are fed at different distances from the head of the needle. Reversing the yarn-guide position will obviously give reverse plating, although individual selection for small patterns is difficult. Fairly large, simple designs can be pro-

(*Continued on page 200*)

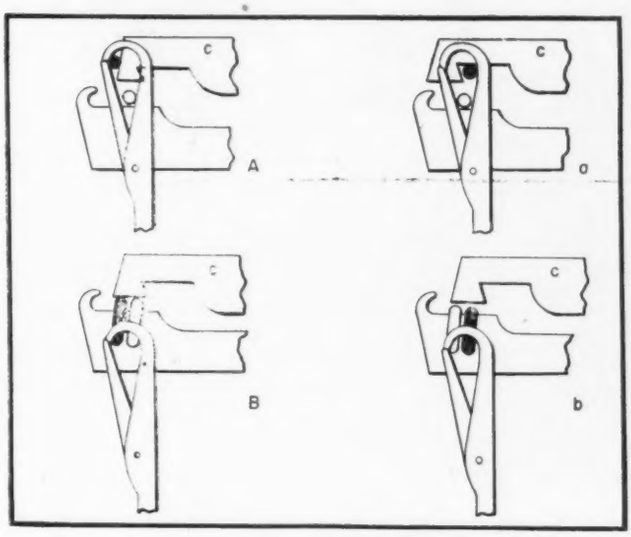

Fig. 5. Positive-change plating.

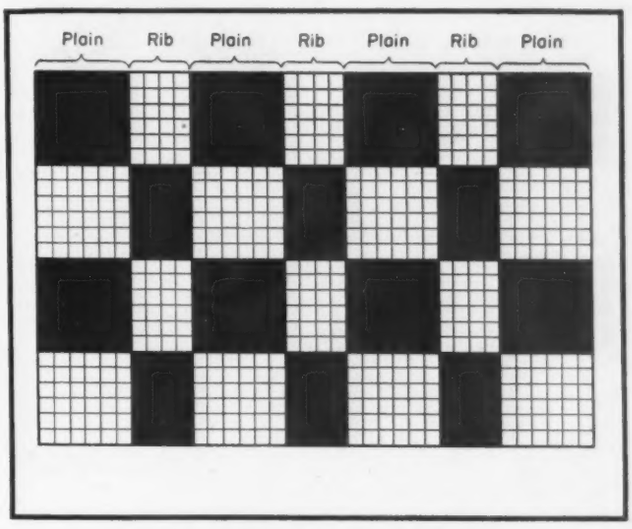

Fig. 6. Cross-plating on 6x4 rib.

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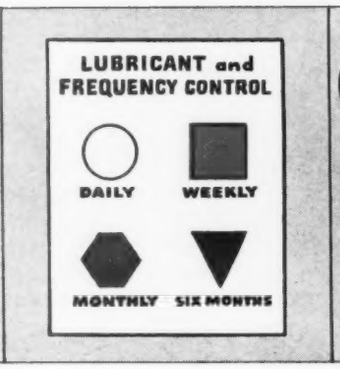
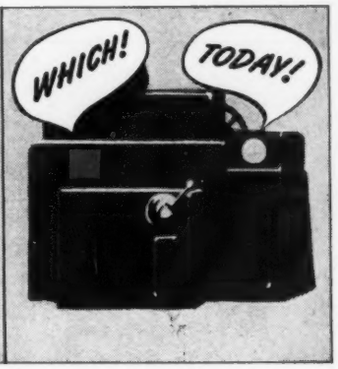
B. Then each lubricant container and piece of lubrication equipment is "color identified." Thus there can be no mistake as to which lubricant or oil goes where.

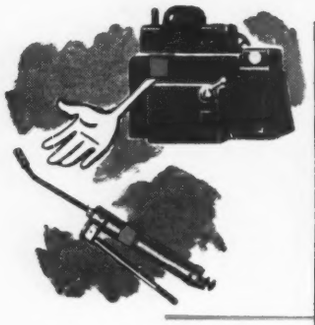


C. Then color symbols which correspond to the color marking on the lubrication equipment and containers are applied at each fitting, gear case and oil hole.



D. The color of the symbol shouts "which" grease or oil. The shape of the symbol shouts "how often." If lubrication points are out of sight, the symbol shows where it is.

WHAT COLOROUTE DOES



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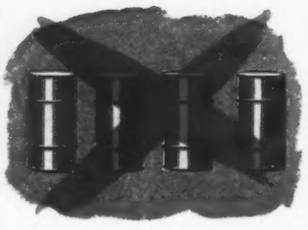

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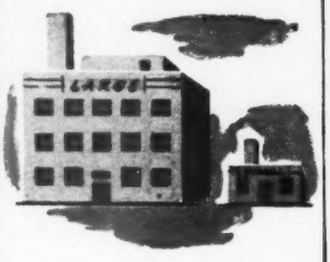

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Competition Will Up-Grade Textile VALUES, NACM Told

HIGHLIGHTS: *Cotton improvement and versatility stressed at annual meeting — Rayon use likely to increase among New England mills as crimped staple, finer filaments, and stronger yarns come in — Noncellulosic synthetics hold promise — Finishing problems will be minimized by free exchange of information.*

NEW ENGLAND TEXTILE MANUFACTURERS were urged to give close study to the price and supply position of raw cotton and were warned that competition from synthetic fibers will be more intense than ever before once current shortages of cotton goods are satisfied. Speaking before the 92nd annual convention of the National Association of Cotton Manufacturers in Boston on Oct. 10, was Russell T. Fisher, president. The immediate outlook for the sale of cotton products is good," he said. "There are indications, however, that the edge is off the public's appetite. Customers are beginning to look for better values for their money. Our industry is too dependent upon general economic conditions to separate its outlook from the over-all picture. It would seem reasonable to suggest that the mills study and watch their inventory position.

"New England mills," Mr. Fisher said, "were among the first to recognize the potentialities of rayons. The expansion in the use of synthetics was temporarily interrupted by the war. Now, with increasing quantities of rayon and other synthetics becoming available, the prewar trend will undoubtedly resume, probably at an accelerated pace."

While imports of cotton goods are now small, he added, they are growing steadily, especially fine combed yarns from England. He urged finegoods manufacturers to keep a careful check on the situation and to remember that the reciprocal trade agreement with Great Britain drastically lowered protection on fine cottons.

COTTON PROGRESS. The place of cotton as a textile raw material was described by John W. Wright, chief, Research & Testing Division, Cotton Branch, United States Department of Agriculture Production and Marketing Administration.

"The dominant position of American cotton," he stated "as a raw material for textiles is attributable primarily to the versatility of cotton fiber for a wide field of uses, and to the wide range of quality represented in the American crop of upland cotton. This cotton has an extreme range in staple length from about ¾ in. to 1¼ in. Various other physical properties of cotton such as fineness, tensile strength, fiber-length uniformity, and cell-wall thickness also vary within wide ranges. For example, fiber tensile strength has been found to vary from about 57,000 to 108,000 lb. per sq. in. Fiber length uniformity varies from 65 to 87%. American upland cotton varies in fineness from less than three micrograms per inch of fiber to about seven micrograms. The range in maturity of fibers has been found to vary from 45 to 92%.

"These variations definitely increase the adaptability of cotton for different uses. Furthermore, the wide variation in grades with accompanying ranges in prices, enables the discerning textile manufacturer to select his raw material with a view to maximum economy as well as to physical suitability for his purpose.

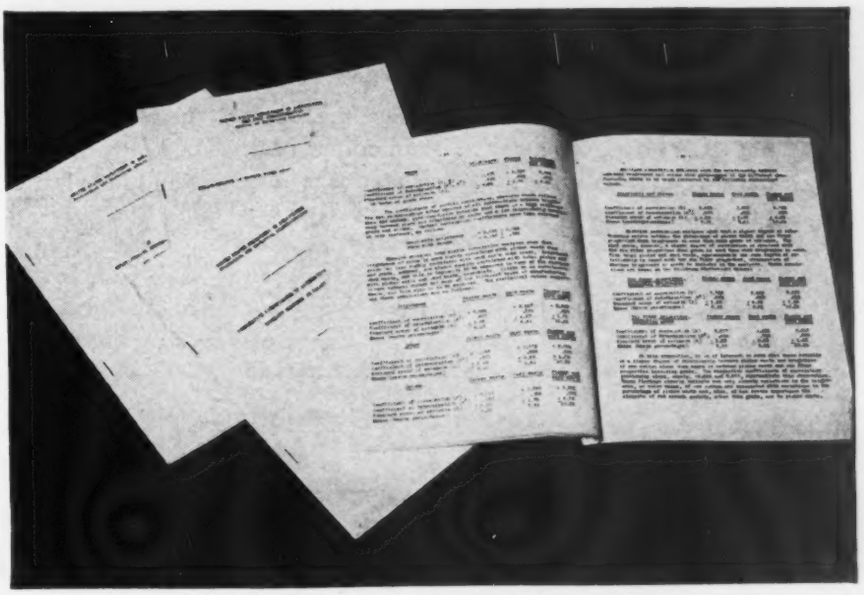
"Over a period of years, a large volume of data pertaining to the fiber properties and actual spinning performance of thousands of case-historied

(Continued on page 210)

Russell T. Fisher was re-elected president of the National Association of Cotton Manufacturers for the tenth consecutive term at the Oct. 10 meeting.

Vice presidents elected were: Amory Coolidge, vice president, Pepperell Mfg. Co., Boston, and Harry S. Newcombe, Berkshire Fine Spinning Associates, Providence, R. I.

Directors elected for three years were: Robert Braun, chairman of the board, Bates Mfg. Co., Lewiston, Me.; Albert H. Crossman, president, Utica & Mohawk Cotton Mills, Utica, N. Y.; Rudolph C. Dick, president and treasurer, Naumkeag Steam Cotton Co., Salem, Mass.; Andrew W. Macy, treasurer, Nashawena Mills, New Bedford, Mass.; J. Linzee Weld, president, Textron Mills, Inc., Boston, Mass.



The U.S.D.A. has issued a series of valuable reports on the properties of cotton fibers of which the above are samples. J. W. Wright, chief, Research & Testing Division, Cotton Branch, told the NACM meeting about the results of these activities.

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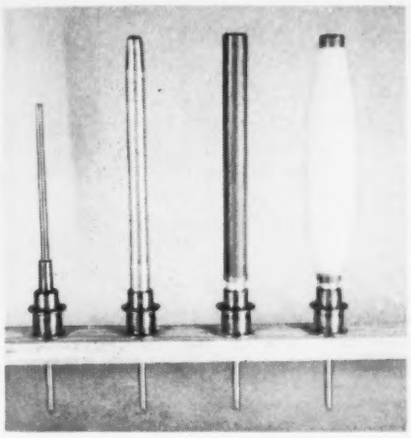
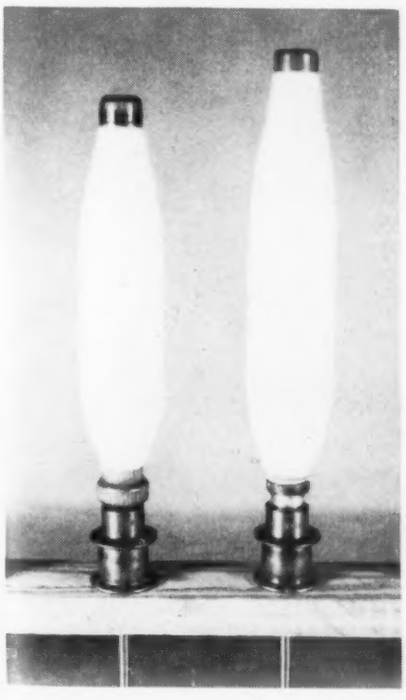
TEXTILE Equipment NEWS

Aluminum Spindle Adapter For Paper Tubes Increases Warp-Package Size 30 to 35%

An aluminum adapter for converting old spindles so they can be used with new large-package paper tubes has been developed by Walter Regnery, assistant general manager of Joanna Textile Mills, Goldville, S. C., and is being manufactured by Transportation Equipment Co., 613 West 16th St., Chicago. Known as the Joanna Adapter, the device reportedly enables mills to increase the size of warp-spinning packages by 30 to 35%, and can be applied to either band- or tape-driven spindles.



(Above) Sequence shows (from left to right) the old spindle without adapter, spindle fitted with adapter, paper-tube bobbin in place, and complete warp package as spun on paper tube. (Below) Size of warp package is increased 30 to 35% by using paper tube. (Transportation Eqpt.)



The adapter consists of a tubular section with suitable tapers at the ends for proper fit of the paper bobbin and is machined for a press fit onto the spindle.

The straight-side paper tubes used with the adapter are made by Sonoco Products Co., Hartsville, S. C., and are $8\frac{7}{8}$ in. long by $1\frac{7}{8}$ in. in circumference. In tests they reportedly ran 9 hr. and 10 min. as against 6 hr. and 20 min. for wooden bobbins. The larger size represents an increase from about 4,000 yd. to about 6,000 yd. of 30s yarn per bobbin.

Tip drive for the paper bobbin is achieved by a cushion grip at the top and no grip for the remainder of the length. This reportedly permits higher spindle speeds. Another advantage claimed for the adapter and bobbin is that all bobbins ride evenly at the same height.

Joanna Textile Mills is said to be equipping all warp-spinning spindles in the plant with the new adapter as part of its extensive modernization and expansion program.

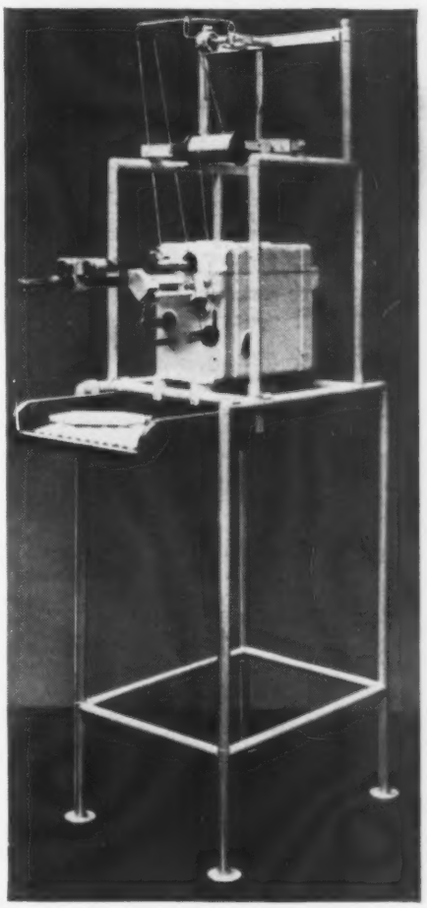
Filling Winder Made in Self-Contained Units

A new filling-bobbin winder has been announced by Weston (Engineers) Ltd., Foulridge, England. The basic non-automatic model (shown in cut) can be fitted with complete automatic attachment. The machine has three winding speeds of 3,000, 3,500, and 4,000 r.p.m. Any one of the speeds can be used by changing rubber belts on a small unit at the rear.

Each spindle unit is self contained, embodying its own power source, which is a 50-volt, 3-phase, a.c. motor. A transformer with capacity for 20 motors is supplied to reduce the line voltage. Spindles rotate in either clockwise or counter-clockwise direction, at constant speed; and direction of rotation can be changed by means of a swing gear. Spindle speed and speed of traverse can be adjusted independently. A new-type compensator and yarn-tension device is said to take care of changes in yarn speed as the yarn traverses up and down the nose of the build.

A conical builder controls diameter of bobbins, and is adjustable by means of a micrometer set screw. Yarn-break and full-bobbin stop motions are electro-mechanical.

All working parts of the winder are reportedly machined within a tolerance of ± 0.0003 in.



Courtesy Harliquin Press Co., Ltd.

Filling winder operates at 4,000 r.p.m. spindle speed. (Weston)

New Loom Employs No Superstructure

A new loom, developed by S. A. Adolphe Saurer, Arbon, Switzerland, and distributed in the U. S. by Saentis, Inc., Union City, N. J., incorporates a number of novel features. The loom is reportedly capable of weaving light or heavy fabrics of cotton, wool, rayon, silk, or linen. The single-shuttle basic model is designed to be fitted with various supplementary devices such as automatic filling change, either bobbin or shuttle type; drop boxes, either 2 or 4 boxes on one or both sides; and double-lift, open-shed dobby head of up to 22-harness capacity. The loom is designed to permit a change in loom width by replacing a few horizontal parts. It is not immediately available.

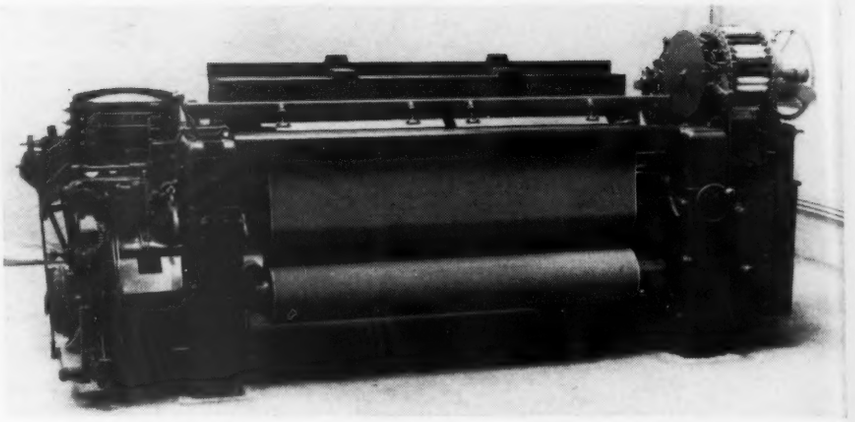
All appliances which the weaver has to operate by hand are concentrated on one side so that they can be reached from one place. The principal loom-operating mechanisms are said to be enclosed in housings formed in the main frames in order to reduce cleaning effort, prevent lint accumulation on the parts, and reduce accident hazards. Superstructure has been eliminated. Harnesses are supported and operated from below.

Either belt drive or individual-motor drive through V-belts can be used. In either case, the necessity for the weaver to turn the handwheel when positioning the lay has been eliminated, because the starting lever provides means for slow movement in either forward or backward direction.

Driving cranks are actuated through two spur gears by a shaft which operates at three-times loom speed. Cranks can easily be replaced with others of different throw, if desired, it is said.

Mechanical let-off motion is reported to give smooth service with either heavy or light warps, and to be usable with warp beams up to 600 mm. (24 in.). By means of a hand lever, it is said that all harnesses can be brought simultaneously to center position to facilitate drawing in broken ends.

The dobby head uses heavy-grade punched paper tape for pattern control. Ends of the tape are cemented together to form an endless roll.

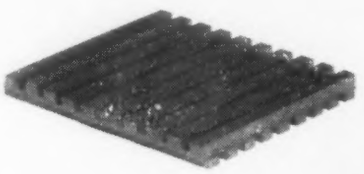


Saurer loom uses no superstructure; harnesses are supported and operated from below. (Saentis)

Synthetic-Rubber Pads Reduce Machine Vibration

Synthetic-rubber vibration mounts of a novel design have been announced by MB Mfg. Co., Inc., 1060 State St., New Haven 11, Conn. Furnished in thicknesses of $\frac{5}{16}$ in., standard sizes are 6, 9, 12, and 18 in. square. In many cases, it is claimed, the pads entirely eliminate the need for hold-down bolts. For installations requiring hold-down bolts, a second pad and washer are placed between bolt head and machine foot.

Recommended loading for the pads is 50 lb. per sq. in., which is reported to be sufficient to compress the $\frac{5}{16}$-in. material to $\frac{1}{4}$-in. thickness. A special adhesive is available for affixing pads to floor or machine foot when natural adhesion of the material is considered to be inadequate.



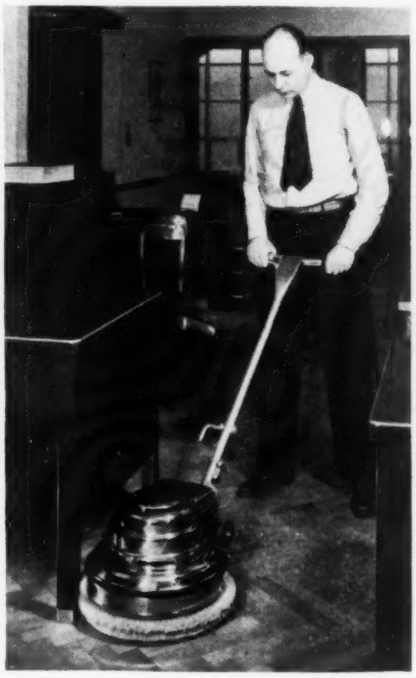
Synthetic-rubber vibration damper is made of oil-resistant material. (MB Mfg.)

Floor Machine Cleans Flush With Walls

An extra-low disk-type floor machine of new design for polishing, scrubbing, and steel-wooling floors has been introduced by G. H. Tennant Co., 2530 N. Second St., Minneapolis, Minn. Unique feature of the new machine is a special side-polishing brush which reportedly cleans and polishes flush with the walls, even polishing the baseboard. The brush, which has bristles extending beyond the circumference of the disk and approximately 2 in. high, is said to eliminate bumping and scratching of furniture and to permit fast, easy operation under crowded conditions.

Overall height of the machine, which is less than 12 in., is said to permit it to operate in formerly inaccessible places such as under desks and machinery. A wheel adjustment is designed to allow the machine to operate in divided-weight position, with 50% of the weight on the wheels, or with the full pressure on the brush.

A steel tank carried on the machine holds water and soap solution for scrubbing. The liquid feeds to the center of the brush at the flick of a lever and flows through the bristles. Features of the machine include a positive gear drive, splash-proof protection, and an adjustable handle which moves to any operation height. Weight of the machine equipped for use is about 100 lb.



Extra-low floor machine features brush with bristles extending beyond circumference of machine. (G. H. Tennant)

Research IN A PAPER TUBE

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ALL
TYPES
ALL
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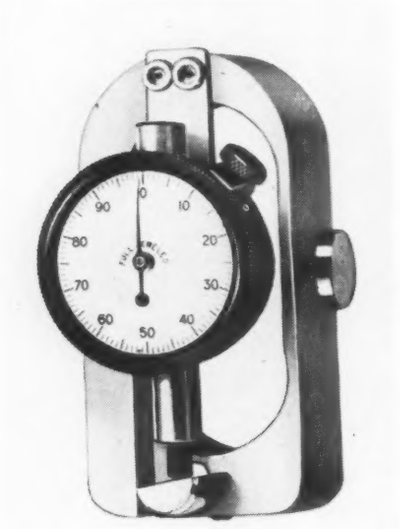
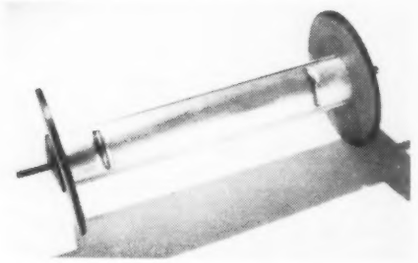


A new all-purpose pressure gage announced by W. C. Dillon & Co., Inc., 5410 W. Harrison St., Chicago 44, is designed to be used as a tensometer on moving yarns or to measure pressures in a wide variety of manufacturing and shop processes. Six models are available in ranges of 0 to 100, 0 to 250, 0 to 500, 0 to 1,000, 0 to 2,500, and 0 to 5,000 lb. per sq. in. Weights of the instrument range from 1¼ lb. for the smallest to 2½ lb. for the largest size. The gage has been made small, it is said, so that it will fit into tight places heretofore inaccessible.

Aluminum-Barrel Spool Features Light Weight



Jack spools with aluminum-alloy barrels, announced by Lestershire Spool & Mfg. Co., Johnson City, N. Y., are said to be much lighter and stronger than conventional designs constructed of wood or steel. Three slasher grooves have been incorporated to increase the ease of removing yarn remnants and to add to the longitudinal and cross-sectional strength of the aluminum-alloy barrel. Yarn slippage is reported to be reduced to a minimum. Spool heads are secured permanently to the barrel and are said to have withstood over 9,000 lb. force between the heads in test.

Attachment Records Process Operations

An operation-recording attachment for industrial process control equipment has been introduced by Brown Instrument Co., 4509 Wayne Ave., Philadelphia 44. The device functions through use of an auxiliary pen and is said to be simple in design and operation. The actuating element is a bimetallic strip through which a small current passes whenever the power circuit operating the process equipment is energized. Resistance to the current heats the strip, causing it to warp; and the movement in warping is transferred to the pen which moves in $\frac{3}{16}$ in. from the outer edge of the chart.

About 10 sec. are required from the time the circuit is energized until the pen is in proper recording position, and within 30 sec. after the circuit is de-energized the pen returns to the outer edge of the chart, it is stated. The smooth action is reported to avoid any snap action that might splash ink.

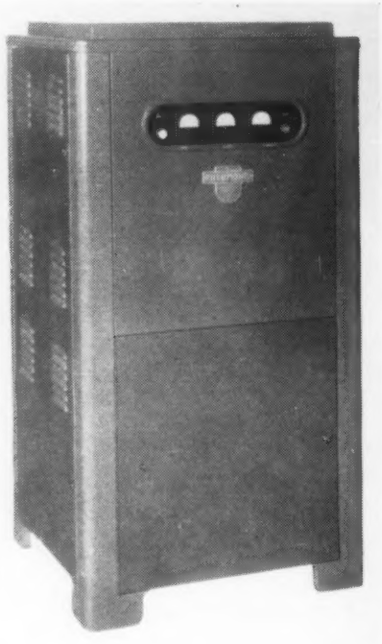
Heater Generates 285 B.t.u. per Min.

A dual-purpose electronic heat generator reported to be suitable for both induction- and dielectric-heating operations has been announced by Induction Heating Corp., 389 Lafayette St., New York 3.

Designed for use in experimental laboratories, testing depots, and development-research departments, the generator is provided with two separate, interchangeable oscillator sections—one for induction and the other for dielectric heating. Changeover from one oscillator section to the other is said to be a simple job, accomplished by removing one oscillator section and replacing it with the other.

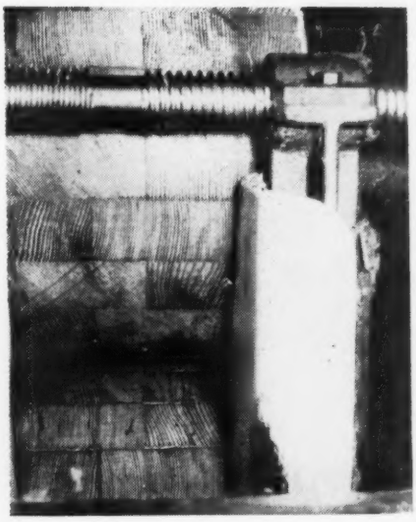
The unit is a high-frequency generator, operates on 205- to 245-v., 60-cycle, single-phase, a.c. power supply and has a full-load input of 12 kva. at 90% power factor. Its full-load output is reported to be 285 B.t.u. per min., or approximately 5 kw., at nominal frequencies of 375 kc. for induction heating and 20 mc. for dielectric heating. The tube complement comprises two mercury-vapor rectifiers and one water-cooled oscillator.

The generator weighs 1400 lb. and is 36 in. wide, 28 in. deep, and 62⅛ in. high.



Dual-purpose electronic generator designed for induction or dielectric heating has exchangeable oscillator sections. (Induction Heating)

Resin-Treated Lags Grip Better Than Rubber



Resin-treated lags may last 5 yr., as indicated by 14-month test. (Riggs & Lombard)

New resin-treated lags, announced by Riggs & Lombard, Inc., Lowell, Mass. are said to have shown good results after testing for more than 14 months on a #65 fulling mill.

Use of the resin treatment on lags is said to make possible the use of softer, cheaper, more plentiful woods which have a better grip than hard woods, a much better grip than rubber, and are impervious to soap, alkali, and tar removers. After the 14-month test, a good portion of which was on heavy O.D. goods for the Army, the lags show practically no wear at all, and curvature or bowing out is practically negligible, it is reported.

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In courting consumer preference speak for yourself with the sure, clear, persuasive tone of Kaumagraph product identification — the tone that emphasizes quality, accentuates worth and helps establish superiority. The touch of heat, manual or automatic, on a Kaumagraph Dry Transfer* or Prestomark instantly reproduces this essential marking on any textile, leather, rubber or synthetic. Crests, trademarks and symbols on blankets and linens — back and selvage marking of goods in manufacture — every kind of marking to give your product instant identity in the mill and that telling tone in the market, can be quickly, easily achieved with clean, outstanding, seen-at-a-glance Kaumagraph identification.

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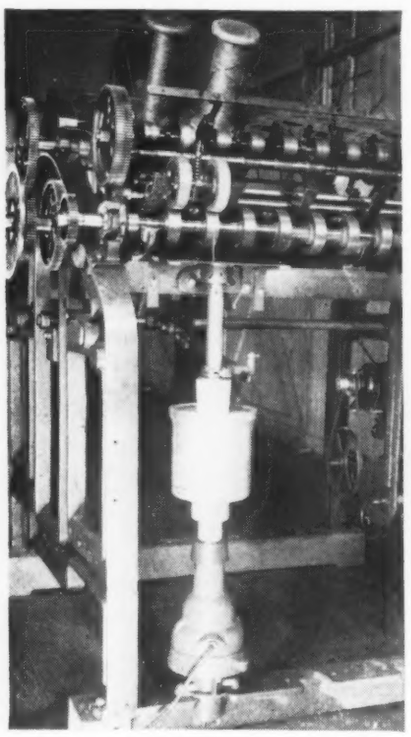
Wosted Pot Spinning Produces 3-lb. Package

A pot-spinning process for worsted yarns developed by John J. McCann, 90 Beech St., Lowell, Mass., produces 3-lb. packages, reported to be 700% larger than commercially spun packages, at 2,500 in. per. min. front-roll speed. It consists of an individual-motor-driven aluminum pot and tube, operating at 10,000 r.p.m., through which is fed the strand emerging from the front rolls. The pot has a main chamber 7 in. in diameter and 7 in. deep. Under the main chamber is a small chamber 3 in. in diameter and 1 in. deep which is open to the larger chamber at the top and to a fan at the bottom. The fan pulls the initially delivered strand of fiber into the small chamber to keep the leading end of untwisted yarn out of the package proper.

The spinning device reputedly can handle other fibers than wool and be used also as a twister or roving frame.

Simplicity in frame design is said to be achieved because the individual-motor drive for the pot eliminates a great number of parts; the setting up and maintenance of the device are both reported to be simple and easy. No rings or travelers are required.

Using two sets of carrier rolls, drafts up to 25 are said to have been operated successfully.

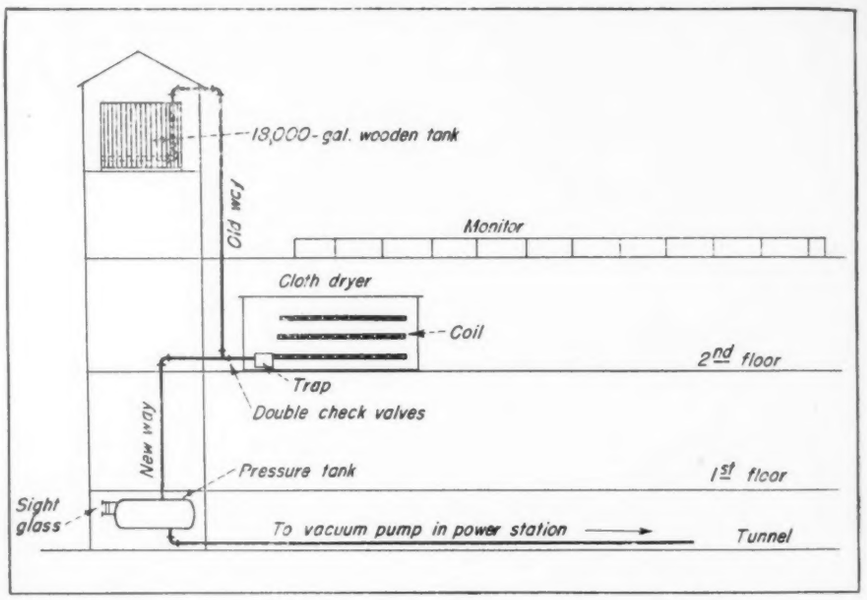


Worsted pot-spinning device operates at 10,000 r.p.m. and allows 400% increase in front-roll speed. (McCann)

Open Condensate Tank Gave Mill Much Trouble

An 18,000-gal., open-top tank was installed in the tower of our new finishing plant, reports a mill engineer, to receive the condensate return from several cloth dryers. From the beginning of our operation of the new plant, we had endless trouble with steam from the tank getting on everything around the tank and also from water running back into the heating coils of the dryers, in spite of two check valves installed to prevent it.

Within a short time, it was evident that we would have to replace the tank. We bought a small, closed steel tank and installed it as shown here. The trouble we were having with our tank and condensate return stopped immediately.



Small, closed steel tank located in basement solved condensate problem after an old-style tank in the tower proved to be unsatisfactory.

PRODUCTS & PROCESSES

Silicone Resin

DC 2103 Dow Corning Corp., Midland, Mich.

A thermosetting silicone resin produced in commercial quantities has been announced by Dow Corning Corp. Named DC 2103, it is designed for use as a heat-stable bonding material for inorganic fabrics in the production of rigid electric laminates and for bonding finely divided particles such as powdered metals, mica, silica, or carbon. Properties of the material, as announced by the manufacturer, include high heat stability, very low water absorption, good dielectric properties over a wide frequency range, and resistance to carbon tracking.

WORSTED WARP BREAKAGES REDUCED 15%

NALEX is a worsted warp sizing starch that greatly increases the tensile strength of worsted yarns. It has increased weaving efficiency in leading mills from 10% to 15% — over ordinary warp sizing.

Why? NALEX has eliminated many operating difficulties with its chemically controlled viscosity and cohesiveness. The vagaries of nature — the caprices of weather and soil so often reflected in less fully processed warp sizes — have been refined out of NALEX.

— as a result, NALEX sizes with greater uniformity . . . penetrates deeper . . . adheres all loose fibers securely . . . and forms a strong, smooth continuous film on the yarns to attain maximum elasticity — and greatly reduce warp breakages.

NALEX is colorless, nearly transparent. It retains the full depth of shade in bright colored yarns. It is also being widely used for fine combed cotton yarns, carded cotton yarns as well as worsted yarns of all types.

NALEX is readily available at savings from $500 to $1,000 a carload over ordinary warp sizes. Ask for a trial demonstration. A National technician can run off a few beams without upsetting your regular production.

National also produces: KOVAT, a cold water swelling gum for all textile printing; FLOJEL, uniform, thin boiling corn starches in all standard fluidities; HOOSIER Pearl Cornstarch; FIBERTEX for textile finishing; and AMBERTEX, a heavy-bodied thickener for white discharge, direct and vat color printing.

Offices: 270 Madison Avenue, New York 16; Boston, Philadelphia, Chicago, Indianapolis, San Francisco and other principal cities. In Canada: Meredith, Simmons & Co., Ltd., Toronto. In Holland: Nationale Zetmeelindustrie, N.V., Veendam.

Dunellen Plant

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STARCH PRODUCTS

STARCHES — AND SPECIALTIES WITH EASILY DEMONSTRATED SUPERIORITY

Kinks AND SHORT-CUTS

A $25 SAVINGS BOND FOR YOUR IDEA

A $25 Savings Bond will be awarded each month for the most useful "kink" published in this department. This contest is open to all readers of TEXTILE WORLD, and there is no limit to the number of entries any one person may make.

Contributions must be received not later than the last day of the month to be eligible for the award for the second succeeding month. Items may pertain to production methods, mill engineering, safety, cutting costs, improving quality, speeding up production, in brief any little device, stunt, kink, or short-cut which you have tried out in your own mill and which you believe will be helpful to other mill men. Items should contain sufficient detail to permit other mill men to utilize the ideas in their own operation. Previously published material is not eligible for the award. Judges of the contest are the editors of TEXTILE WORLD.

TEXTILE WORLD shall have the right to publish any items submitted. Items which are accepted will be paid for at our regular rate for this type of matter with extra payment for appropriate sketches or photographs. The sketch you submit need not be a finished drawing.

In writing to this department, give your real name and address as evidence of good faith and to permit payment for items accepted. Please advise whether your name may be used with the kink.

Contributions should be addressed to: Technical Editor, TEXTILE WORLD, 330 West 42nd St., New York 18, N. Y.

★ **SAVINGS BOND PRIZE FOR NOVEMBER**

(September Contest)

Automatic Stacker Applied to Converted Paper Cutter for Use on Fabric

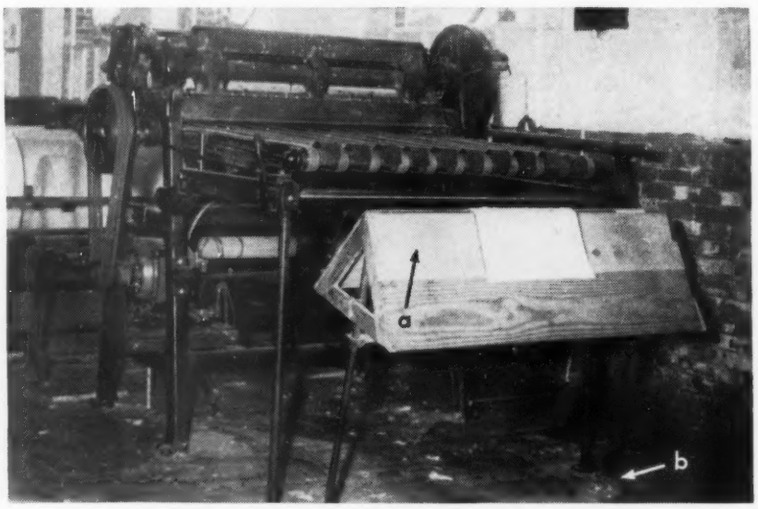
In our cloth room, it is necessary to cut birdseye and other woven goods in relatively short lengths; and for some time these cuts were made by hand with shears. Of course, this cutting operation was slow and costly. In order to do the cutting mechanically to reduce labor and cost, we converted an old paper-cutting machine to cloth cutting.

We used a 36-in. machine; and because the cloth is not of sufficient stiffness to permit self-stacking, it was necessary to build an automatic stacker, which we call a doffer. The doffer is only a triangular wooden trough, inverted so that the cut length of cloth will be across it, and is equal in length to the width of the delivery apron of the machine.

The doffer is mounted about 6 in. below the delivery apron on two vertical shafts which work in open steps fastened to the floor. A cross shaft connects the two vertical shafts, and connected perpendicularly to the cross shaft is a driving shaft which extends beneath the delivery apron to a crankshaft having a cam offset to drive the doffer in a back-and-forth motion.

The crankshaft is timed through a train of gears with the cutting mechanism of the machine so that the cuts will be stacked accurately, regardless of the length of cut for which the machine is set. When the end of a cut leaves the delivery apron, the doffer is at its nearest position to the machine. As the delivery of the cut continues, the doffer moves forward, contacts the hanging end of the cut, and takes it forward, allowing the other end of the cut to fall on the other side of the triangle while the doffer is in its position farthest from the machine. To prevent sliding of the cloth on the doffer, strips of sandpaper are fastened to either side of the doffer.

Cloth is fed from a roll mounted on a frame behind the machine; and once the machine is put into operation, it does not require the constant attention of an operator. (K-578)

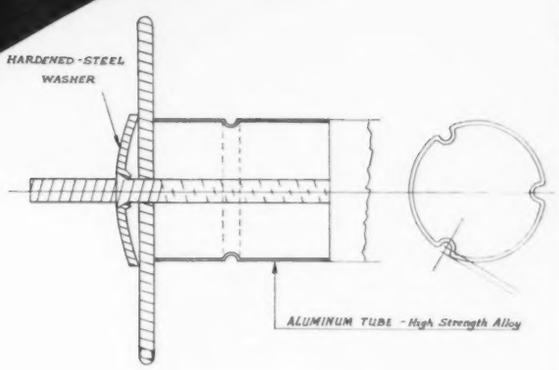


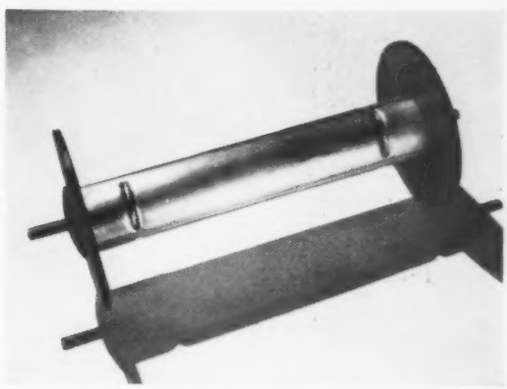
*The paper cutter converted to use on cloth can be set to cut any length desired. Note the sandpaper, **a**, which prevents the cloth from sliding off the specially-built doffer and the step, **b**, which is one of the vertical shafts supporting the doffer.*

(KINKS AND SHORT-CUTS—*Continued on page 160*)

a New HIGH in JACK OR DRESSER SPOOL ENGINEERING

MUCH LIGHTER MUCH STRONGER





Made of high-strength alloyed aluminum tubing the New Lestershire Jack or Dresser Spool reaches a new high in engineering features.

This lighter, stronger spool is made with not one but *three* "slasher grooves" in the aluminum barrel, serving not only as an extra ready means for cutting off the yarn, but also strengthens the barrel longitudinally and horizontally. This new patent-applied-for barrel offers far more strength against bending or denting. Yarn slippage is reduced. The spool is lighter than wooden spools and, of course, cannot be damaged as can a wooden spool when the yarn is cut off.

Send us your specifications for a free sample today.

OTHER ADVANTAGES

★ Triple slasher grooved barrels are practically indestructible.

★ Rust proof and slip resistant.

★ Constructed with durable fibre heads and reinforced with hardened steel washers (see working sketch above).

★ Position of slasher grooves marked on inside each head.

PRECISION SPECIAL PURPOSE BOBBINS

LESTERSHIRE SPOOL & MFG. CO.
JOHNSON CITY, NEW YORK

KINKS & SHORT-CUTS
(*Continued from page 158*)

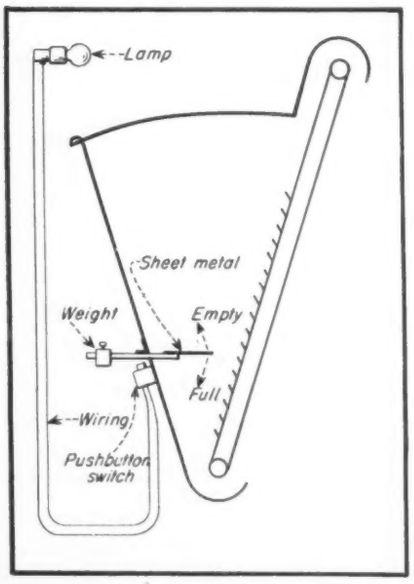
Signal Light Warns Of Empty Card Hopper

In order to warn a wool-card tender when the level of wool in the hopper feeder falls below the level necessary for properly feeding the card, I devised a pilot lamp which lights up when the supply of wool falls to a certain level.

A rectangular hole was made in the back wall of the hopper, and a straight lever was inserted in the hole, as shown in the accompanying sketch. This lever was fastened to the upper side of the hole with hinges.

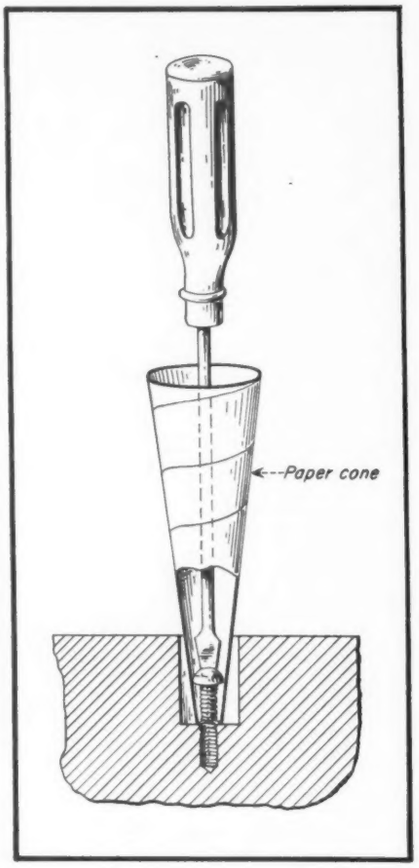
On the end of the lever projecting inside the hopper, a piece of sheet metal about 8x12 in. was riveted. On the other end of the lever, a weight slightly heavier than the sheet metal was placed, so that when there is no wool on the sheet metal, the weight will force the outside lever down.

A push-button switch was fastened to the lower side of the rectangular hole, with the button in a position to be contacted by the weighted lever when it lowered. The switch was connected with the pilot lamp, so that when the lever threw the push-button switch, the pilot lamp would lightup. *(K-567)* A. de Swaan, Ramat Gan, Palestine



When the supply of wool in the hopper of the card falls so low that the weight of the wool will not offset the weight on the opposite end of the lever, the lever lowers against the switch, lighting the pilot lamp.

Starting Screw in Hole Aided by Paper Cone



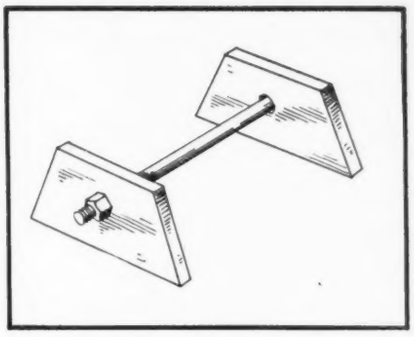
At times it is necessary to replace a screw in a position which does not provide sufficient space for the fingers to hold the screw. Attaching the screw to the screwdriver with a lump of hard grease is a trick which is sometimes effective, but a better method is that shown in the accompanying sketch. The screw is dropped into a cone rolled out of a piece of fairly stiff paper, the screwdriver blade is engaged in the slot of the screw, and the screw is guided into position. (K-571) L. Kasper, Philadelphia, Pa.

Centers of Card Screens Reinforced With Clamp

When we installed metallic clothing on our cotton cards, we found that it was desirable to set some of the carding parts to closer gages because of the shorter teeth of the metallic clothing. As a result of these closer fittings, we found also that the standard rib screens used with the lickerin and cylinder did a better job when they were reinforced.

Although the idea is not new, we adopted the use of a small trapezoid clamp which fastens to the middle seams of the lickerin and cylinder screens directly beneath the point where the two screens come together.

The clamp consists of two pieces of steel $\frac{1}{4}$ in. thick, measuring $2\frac{3}{4}$x$2\frac{1}{16}$x4 in. A hole for a $\frac{1}{4}$-in. bolt is drilled in the center of each piece of steel. To use the clamp, place the bolt through both pieces of steel and screw the nut on loosely. Place the clamp with the short sides ($2\frac{3}{4}$ in.) of the pieces up and with one jaw of the clamp on either side of the seams of the screens. Tighten the nut. The clamp serves as an anchor for the centers of the screens and reduces some of the flexibility of the screens—a condition desirable for the close settings needed for metallic clothing. *(K-580)*



This clamp fits snugly against the center seams of the lickerin and cylinder screens of a cotton card and provides reinforcement needed to maintain closer than standard card settings.

Worsted Striping Yarns Need Warping Separator

The use of hard-twist cotton yarn for decorative striping in worsted warps frequently results in considerable trouble during the warping process. We normally use two-ply worsted yarn, plied with S twist, and Z-twist single cotton yarn. When the warper is stopped for any reason, thus removing tension from the ends of yarn, the ends sag and twist around each other; and often ends are broken when the operator is separating them. This breakage, of course, causes a loss of production.

Usually when the proportion of hard-twist yarn in a warp is large, we apply extra conditioning emulsion at the winder. If this application is insufficient to overcome the liveliness of the cotton yarn, we steam the cheeses of yarn.

However, when the proportion of hard-twist yarn is small, we find it much more economical to control the tendency of the ends to twist around each other by the use of a separating

Day-Brite's Easy Maintenance Begins on the Drawing Board

Here are a few of many reasons why maintenance of Day-Brite's heavy duty Day-Line industrial fluorescent fixture is a simple one-man job:

1. The porcelain enameled steel reflectors can be completely removed for servicing or cleaning. Just loosen the two hand-operated wing nuts. That's all. No tools are needed.
2. The wing nuts are fastened to reflector. They can't be lost when the reflector is removed.
3. In continuous installations, the reflectors can be individually removed. They are not fastened together.
4. The lamp starters are located behind sockets and can be replaced without disturbing the lamps.

The DAY-LINE

Heavy duty industrial fixture with porcelain-enameled steel reflectors. Designed for two and three 40-watt and two 100-watt lamps . . . unit and continuous installations. Patent Nos. 2317434, D135375, D133458. Write for Bulletin No. 30A.

Day-Brite Lighting, Inc., 5455 Bulwer Avenue, St. Louis 7, Mo. Nationally distributed through leading electrical supply houses. *In Canada:* Address all inquiries to Amalgamated Electric Corp., Ltd., Toronto 6, Ontario.

14

IT'S EASY TO SEE WHEN IT'S

DAY-BRITE *Lighting*

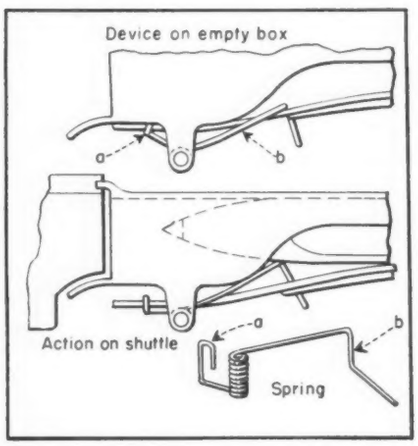
KINKS & SHORT-CUTS

(Continued from page 160)

device attached to the top of the warper creel. The cheeses containing the cotton ends are creeled at the top of the creel frame and the ends passed through the separating device (made of a short length of a splitting comb or of harness reeds).

This arrangement holds the ends of cotton yarn clear of the S-twisted worsted yarns when the warper is stopped. *(K-576)*

Spring on Binder Prevents Shuttle Creeping



When the shuttle is in the box, end b of the spring is held against the shuttle and prevents creeping due to loom vibration. The spring is actuated by the shuttle binder as the shuttle enters the box.

For some time, we had trouble in our weave room with shuttles creeping out of boxes, especially when a loom was weaving a large design or stripe and a shuttle lay idle in a box for three or four woven inches. The creeping was caused, of course, by vibration and was a source of trouble for both the loomfixer and weaver. On jacquard looms particularly, large smashes often resulted.

To end this trouble, I devised the attachment shown in the accompanying sketch for holding the shuttle securely in the box.

The device is made of a coil spring large enough to slip over the pin which serves as a stop for the shuttle binder. Each end of the spring must be long enough to bend in the manner shown in the sketch.

Place the short hooked end over the end of the binder, and remove the pin and reinsert it so that it passes through the spring coil. The long end of the spring should be on top of the binder.

When the box is empty and the binder is in its normal position, the short end *a* of the spring will be raised and the long end *b* will be lowered against the binder. As the shuttle enters the box and engages the binder, the binder lowers end *a*, thus forcing end *b* upward against the shuttle at a point along the curve between the full width of the shuttle and the end of the shuttle.

The pressure maintained by the spring on end *b* will keep the shuttle from creeping out of the box. *(K-577)* *Albert L. Flora, Wrightsville, Pa.*

Mechanics Use Truck For Reel and Tools

Shop mechanics frequently must use a power tool at some point of the mill which is so far from a current outlet that an extension of considerable length must be used. On such a job, the mechanic must carry the extension cord and his tools from the shop to the location of the job. Since carrying a cord of 200 or 400 ft. is something of a job within itself, we have built a reel mounted on a portable truck.

The reel can be made of a short section of a discarded spinning cylinder, either 8 in. or 10 in. in diameter; or the holder can be made by welding 20-in. lengths of 1x¼ in. flat steel to 6-in. drum heads made of gear blanks. On the inside of each drum head, we welded a 10-in. crossarm, so that each end extended 4 in. from the drum to serve as a stop to hold the coiled wire on the reel.

A ⅝-in. rod was inserted through the bores of the end pieces and welded in place, with each end extending 6 or 8 in. beyond the drum heads. To one end of this axle we fastened a winding wheel. The axle was then mounted in bearings on vertical shafts securely fastened to the body of the truck. *(K-575)*

Knitting Needles Held By Adhesive Tape

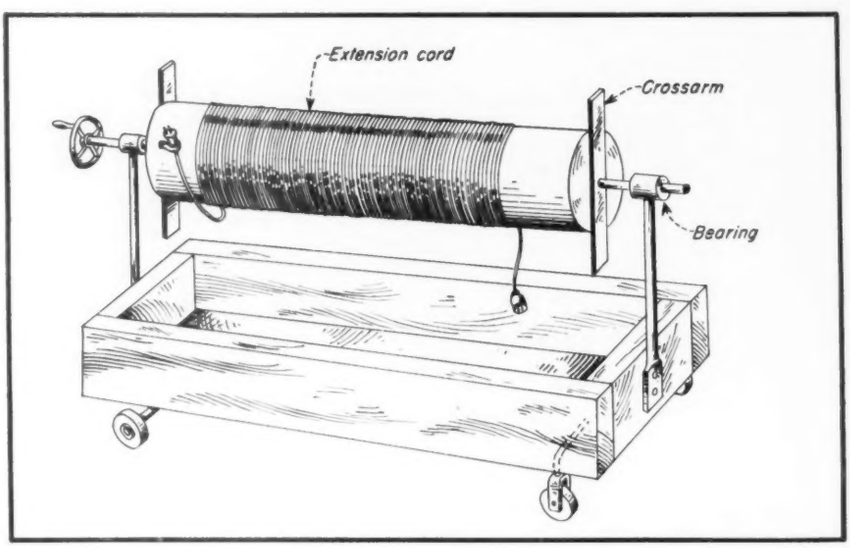
The leather strips on the needle plates of knitting machines often work loose or wear until they are not sufficiently tight to hold the needles in their proper places. Replacing a worn leather with a new strip takes a good bit of time; and to avoid the resulting loss of production, we use adhesive tape instead of leather.

Remove the old piece of leather and stick the tape on the needle plate in place of the leather. If one strip of tape is not thick enough, use two or more thicknesses. *(K-579)* *Luther J. Keller, Allentown, Pa.*

Stop-Motion Circuit Tested With Flashlight

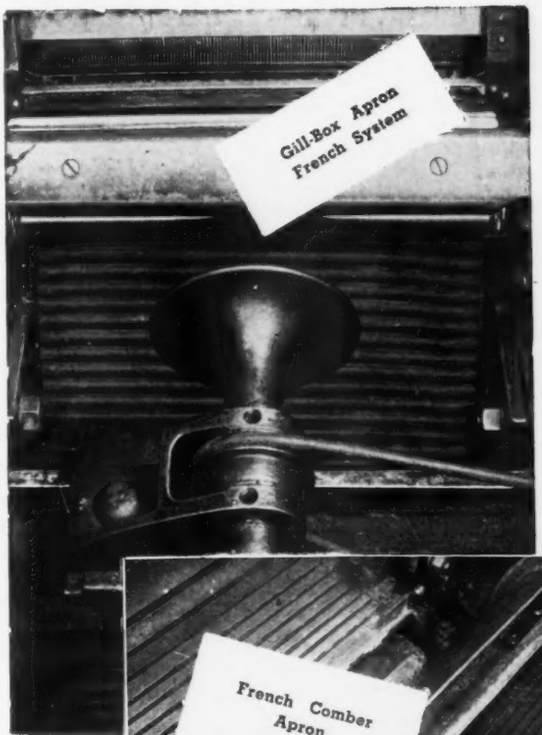
Our looms are equipped with electrical filling and warp stop motions, and frequently a stop-motion circuit must be tested to see if it is shorted. I devised a testing light which works satisfactorily for this test.

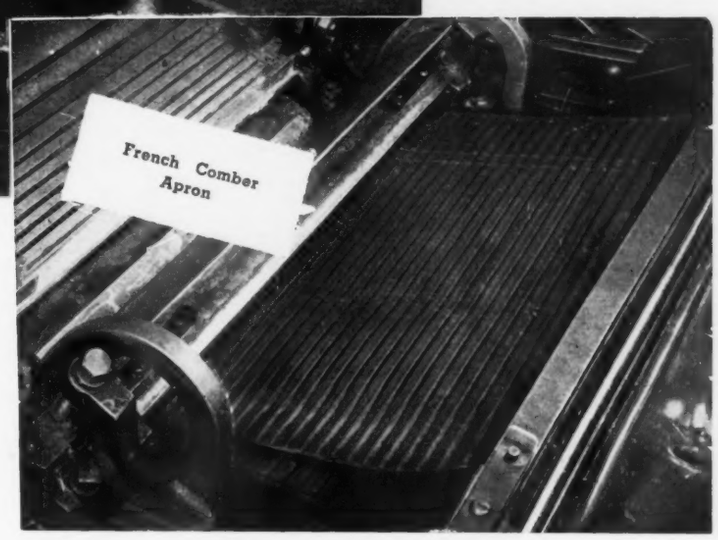
I secured a pencil-size flashlight and connected two short wires to it, one at the back of the batteries and one



The use of this portable truck and reel is an aid to a shop mechanic in transporting his tools and a long extension cord to jobs not located near an electrical-current outlet.

BARNES TANS ONLY THE RIGHT LEATHER for FRENCH COMB and GILL BOX APRONS





You can rely on BARNES, the TEXTILE leather house of long experience, to buy the right leather for use in your mill. We buy only the FINEST Foreign and Premium Domestic Steer Hides. For APRONS, we pay a cent or two extra to obtain hides free of grubs, barbed-wire scratches, slaughter cuts, and other imperfections which would prove inferior. We insist on hides taken from steers killed in the best months of the year, avoiding in particular the manure burns of the winter months. And in these hides we carefully select and cut the correct part for the particular needs of your combs and gill boxes. As in the case of wool, the selection and purchase of the right raw materials is only half of the story. The correct processing is the other half. In our own tannery we apply the particular tanning which our research and years of experience have proved provides long life and good service with maximum economy.

Even thickness throughout, Minimum stretch, Run straight. Strong flexible waterproof lap of even thickness overall.

•

BARNES PRODUCTS MADE OF SELECTED HIDES

Aprons for Combing, Preparing, Finishing and Drawing FRENCH AND BRADFORD SYSTEMS

Chrome—Brown—Special Tan
Plain and Hair-On Loom Strapping

BELTING

First-Quality Center Stock
Prestretched and Manufactured for Each Drive Condition
Available in All Tannages

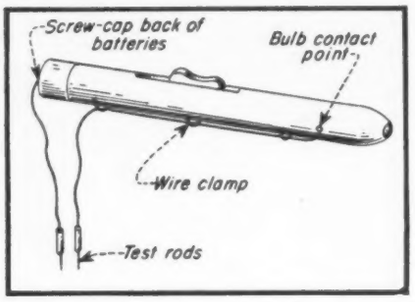
HENRY K. BARNES COMPANY • SALEM, MASSACHUSETTS

BARNES THE *Textile Leather* HOUSE

SINCE 1876

Where unusual knowledge of Leather is combined with long years of Textile experience
APRONS—BELTING • FLAT • ROUND • & ACCESSORIES—STRAPPING

KINKS & SHORT-CUTS
(Continued from page 162)



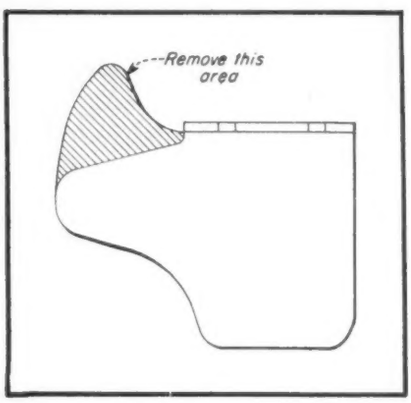
A pencil-size flashlight, small enough to carry in the vest pocket, with test rods connected as shown here is a useful tool for testing the circuit of a filling or warp stop motion.

at the bulb-contact point. To the other end of these wires, I welded short test rods. In using the device, I place one rod on the circuit terminal and the other one on the circuit ground. If the circuit is not broken, the light will come on. (K-531) *Thurman H. Smith, Shelby, N. C.*

Change Shape of Plates To Guide Welt Wires

When welt wires are being inserted into the slots of the welt-bar bridge of a Reading automatic welt turner, a welt wire is sometimes misplaced because of the inconvenient shape of the plates which guide the wires into the slots. Improperly placing the welt wires results in a broken bridge and a displaced needle bar.

We have found that this trouble can be eliminated by cutting off the extension of the plate against which the wires get caught and thrown off their proper course. (K-473)



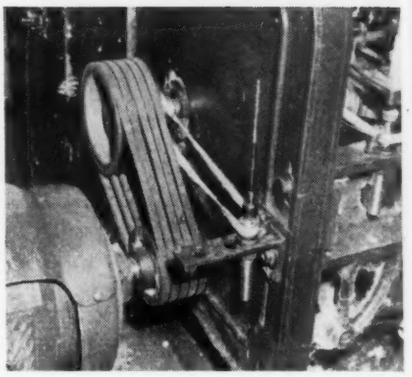
Changing the shape of the plates which guide the welt wires into the slots in the welt-bar bridge of the Reading automatic welt turner, as shown here, eliminates trouble caused by misplaced welt wires.

Choked-Bobbin Drill Is Fastened to Frame

In most spinning rooms, choked bobbins and quills are a constant source of trouble. The chokes are caused, of course, by bunches of yarn around the spindles coming off the spindles and remaining inside the bobbins when the frame is doffed. When a bobbin is emptied and placed on a spindle again, the yarn bunch is forced upward by the top of the spindle into the small part of the bobbin.

The best method we have found for removing these chokes from the bobbin cylinders is to use a drill and compressed air. When a doffer finds a choked bobbin, he puts it in his pocket until he goes back to the bobbin bin to refill his box. Then he drops the choked bobbin into a box designated for it. When this box is full, the big-alley boy reams out the bobbin on a drill and later blows it out with air.

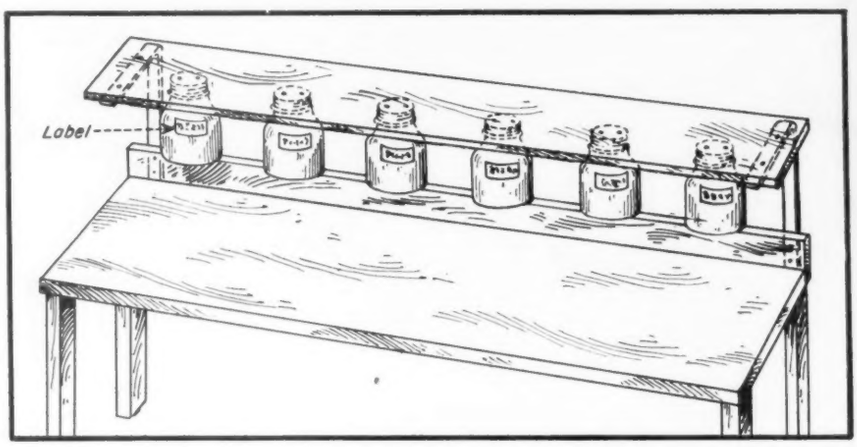
The drill we designed for this purpose consists merely of a bit welded to the top of a spinning spindle. A short rail, made similar to a small section of a bolster rail, is bolted to the outside of the samson at the motor end of the frame; and a regular spindle bolster is fastened to the homemade rail.



When the drill is not in use, it is stopped by throwing the tape off the spindle whorl.

The spindle with the drill welded to it is placed in the bolster, and a tape is passed around the spindle whorl and around the inside hub of the drive sheave on the cylinder. (K-536) *E. G. Hubbard, Jr., Columbus, Ga.*

Coffee Cans Used by Fixer For Storing Small Parts



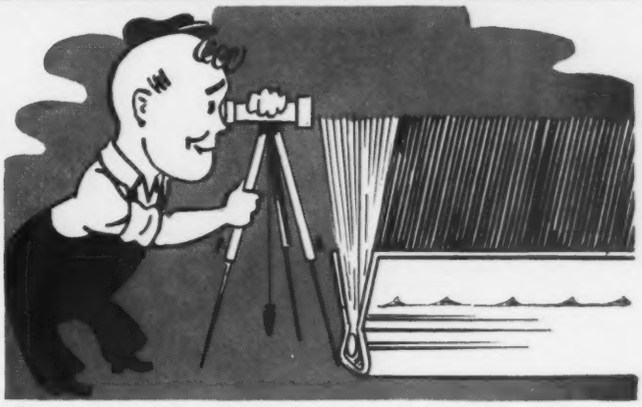
The 1-lb. metal coffee cans are labeled with descriptions of the parts they contain.

Screws, bolts, washers, and other small parts which every mill fixer must have on hand present a storage problem because of their tendency to become lost beneath the tools in a fixer's workbench drawer or tool box. I use 1-lb. metal coffee cans with screw tops for storing these parts. I label each can with a description of the part it contains.

The lids of the cans are fastened with wood screws and washers to a length of 1x4-in. plank. The plank is held in place directly above the workbench by a strip of iron at each end, bolted to the backboard of the workbench.

To remove a bolt or other part from a can, I only have to unscrew the can from its lid. (K-573)

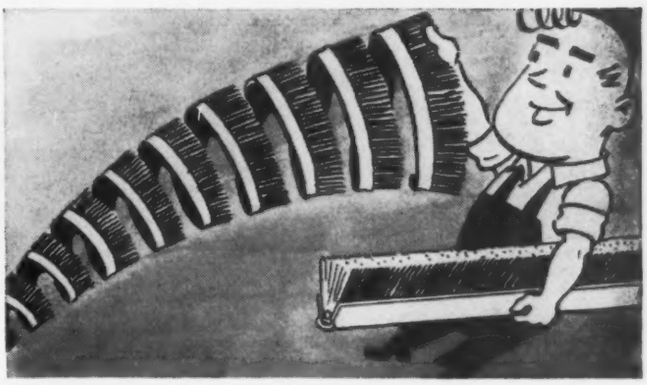
The correct filler material to do your job most efficiently is used. There are literally hundreds of mixtures of natural and synthetic fibers from which to select.



Correct and uniform length of brush material and a gapless, unbroken formation of uniform density throughout the length of the strip assure uniform brushing action.

WHY FULLER-GRIPT *means Better* BRUSHING ACTION

Brush material is rigidly held. The metal backing clinches the material under a plated steel wire, holding it in a viselike grip.



Fuller-Gript Brushes are versatile. They can be wound on cores from ¼" to 3' in diameter, spiraled, bent to any desired shape, or laid in straight strips.

★ ★ ★

Fuller-Gript Brushes are manufactured to close tolerances. Width of the steel back varies from 5/10" up to 1¼", making possible a great variation in the amount of material in a given length of strip. When it is time to replace, the new Fuller-Gript strips will be exact duplicates of the old ones in size and performance. They can be installed in most cases by your own men, often without tearing down the machine.

Let our engineers help you apply Fuller-Gript Brushes to your equipment. If you'd like a sample Fuller-Gript strip, just drop us a line.

Fuller Gript

BUILT-TO-ORDER BRUSHES FOR YOUR EQUIPMENT

THE FULLER BRUSH COMPANY
INDUSTRIAL DIVISION
3594 FULLER PARK, HARTFORD 2, CONNECTICUT

THIS IS NO. 60 OF A SERIES ON

GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

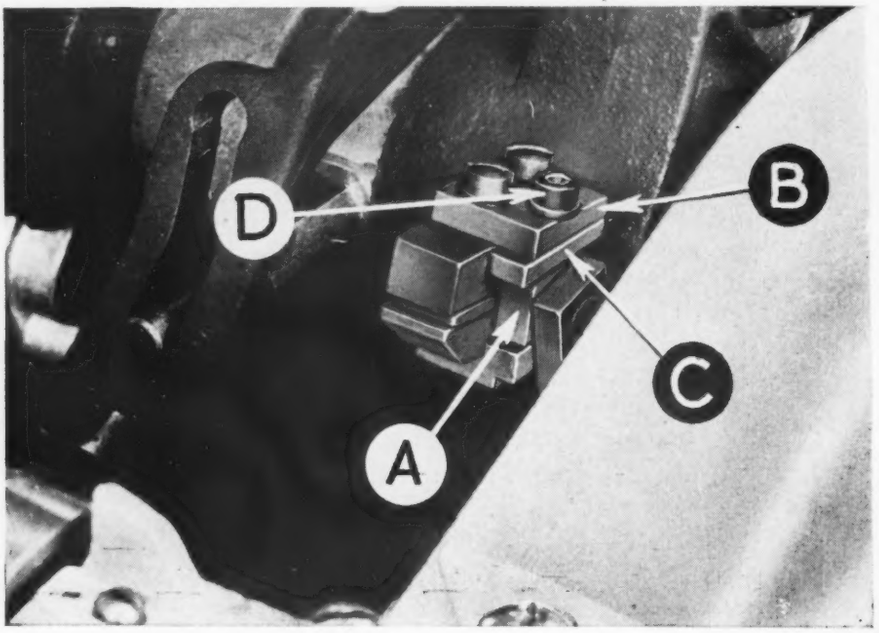


Fig. 1 New Spindle Holder Bearing Plate (44-278-3P3X)

NEW SPINDLE HOLDER BEARING PLATE (Roto-Coner*)

A new design of Spindle Holder Bearing Plate permits adjustment to compensate for wear in the Spindle Holder Bearing, Plates and Dashpot Link Stud Blocks. Such wear would otherwise allow play between the Upper and Lower Plates and the Link Stud Block (A) so that the Cone Holder would be free to bounce on the Rotary Traverse.

The new Plate is made in two parts, the Plate itself (B) and a Block (C) — held together by a screw (D) and washer. The contacting surfaces of the two pieces are milled at an angle of 7°, and the screw hole in the Plate (B) is elongated to allow the Block (C) to be moved along the angular surface. By means of this adjustment, the shoulder of the Plate can be increased so that it will take up the play and prevent bouncing.

WINDING COVERED ELASTIC YARN (No. 50 Winding Machine)

The Standard Pineapple Cone Attachment with Roller Bail is now being used to wind covered rubber yarn. As the package is contacted not by the Thread Guide but by the Roller Bail (A), density is reduced, and there is no scrambled yarn, so that knitting is better than from the ordinary package.

Minor changes are required in the Attachment. The inner leg of the Thread Guide (B) has an angular bend that projects over the outer leg, providing a lock to prevent the yarn rising too high in the Guide. A Bail (C), attached under the Clip Screws, is used to give the yarn direction to the Thread Guide.

Rubber yarn is nearly always wound from skeins and Compensator 90-935-30X is used. It is connected with the stopping mechanism of the machine and will stop the machine without breaking the yarn if a tangle occurs. Because of this fact it is advisable to use the Compensator even if winding overend.

Base tapers of cones vary from 29° to 40°, and tapers at the apex from straight front to 43°, according to the position of the screw in the cam.

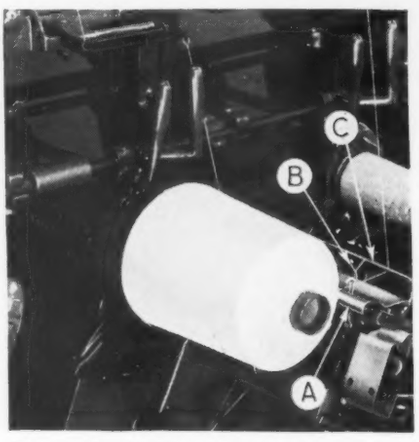


Fig. 2 No. 50 Winding Machine equipped for winding covered rubber yarn

NO. 44 TENSION BRACKETS USED ON NO. 60

All the advantages of the wide variety of Tension Brackets used on the Roto-Coner* (No. 44) are available for the No. 60 Winding Machine.

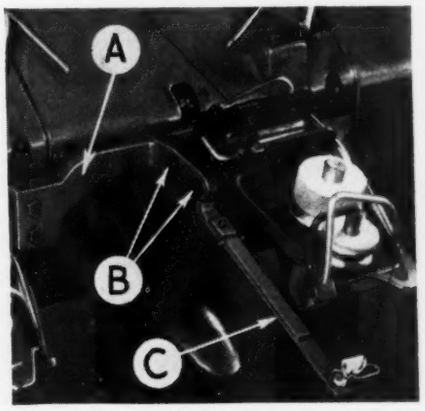


Fig. 3 No. 60 Machine equipped to accommodate No. 44 Tension Brackets

Tension Bracket Holder 60-1028-3X (A), attached to the frame at the left side of the spindle, is so designed that any of the No. 44 Tension Brackets can be mounted on it by two standard screws (B).

A special Breakage Lever 60-49-43 is used with this Holder.

With overend supply, the Supply Rod Bracket 60-144-7JAX is used. If the supply is from skeins overhead, a compensator 44-438-2CAXAA (C) is attached to the under side of the Tension Bracket.

The same Tension can be used on the No. 40 Machine by mounting a special Tension Bracket Holder 40-743-3 on the Tension Bracket Rod.

*Reg. U. S. Pat. Off. September 1946

See our Catalog in TEXTILE WORLD YEARBOOK 23.63

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LETTERS to Pete & Bill, discussing material in this department are paid for when published. Suggestions for the Pete & Bill dialogue will also be paid for if used. If these pages interest you, contribute something to interest others. Address PETE & BILL, Textile World, 330 West 42nd St., New York 18, N. Y.

Pete & Bill

HANDLING THE ABSENTEE

How far should discipline be exercised in correcting irregular attendance habits on the part of the workers?

I SEE YOU'RE PUTTING MISS GLAMOUR-PUSS RIGHT BACK TO WORK, PETE. AFTER ALL THAT LAYING-OUT SHE'S DONE, SHE OUGHT TO BE FIRED OR HORSE-WHIPPED.
YOU SEE A LOT OF THINGS, BILL; BUT YOU'RE WRONG AS USUAL. I'VE JUST SAVED ANOTHER EMPLOYEE FOR THE COMPANY, THAT'S ALL.
1
YOU MEAN YOU LET HER GET BY WITH THAT GRANDMOTHER-SICK BUSINESS TWICE A WEEK WITHOUT A PENALTY? YOU'RE SANTA CLAUS!
NO! WE TALKED IT OVER AND SHE AGREES TO COME TO WORK REGULARLY. BY NOT FLYING OFF THE HANDLE, I SAVED A GOOD WORKER.
2
GOOD WORKER, HUH! WHY PETE, WHAT ARE YOU GOING TO DO WHEN ALL THE EMPLOYEES DECIDE TO LAY OUT TWICE OR MORE A WEEK--TALK TO THEM?
NO, BILL, YOU'VE GOT THE WRONG IDEA. IT'S NOT SLAVE RULES OR PENALTIES WHICH SPUR PEOPLE TO COME TO WORK. THE VERY FACT THAT I EXPLAIN TO THEM THE SERIOUSNESS OF LAYING-OUT MAKES THEM WANT TO HELP US BY COMING TO WORK REGULARLY.
3
BALONEY, PETE. I BELIEVE YOU'VE BEEN READING FAIRY TALES. AND MR. READER OUT THERE WILL WRITE ME AND TELL ME I'M RIGHT.
MR. READER WILL WRITE ALL RIGHT TO TELL YOU YOU'RE WRONG, BECAUSE HE KNOWS THE VALUE OF INTELLIGENT FOREMANSHIP AND WELL-TREATED WORKERS.
4

Letters From Readers

Let the Older Men Teach Their Successors

"The Old Employee"
(Pete & Bill, Sept. 1946)

Dear Pete & Bill:

"There is no substitute for experience." A wise department head knows this to be a fact and, therefore, realizes that to get rid of older employees merely to recruit a younger and possibly more vigorous staff is a very unwise and unhealthy move on his part.

The younger and "green" employees must be taken on as assistants, with all phases of the work to be learned by them, before allowing the seniors to go. It would be wise to acquaint the older employees with the mill's intentions only after the apprenticeship training periods are over. In all probability many would be willing to step out after their successors had proven their worth. No doubt there would be some seniors who would be reluctant to tread "the last mile" and would not accept the news calmly. In such cases it would be detrimental to keep these "objectors" any longer than necessary.

A pension system adopted by a mill could be no finer tribute to the faithful worker who had stayed many years and had finally reached the inefficient stage insofar as production was concerned. With this adopted policy, a changeover in personnel would keep the ball rolling smoothly. (PB1101)

Make Constructive Use of Your Older Men

"The Old Employee"
(Pete & Bill, Sept. 1946)

Dear Pete & Bill:

Pete is right. So long as the older men do their work, keep them on. Experience has proved their ability their loyalty, their steadiness. If they

cannot keep up the pace, it is part of the job of management to find a place for them.

This is especially true where pension plans exist. Firing a man only because of age, leads to well-founded murmuring and grumbling about cheating a man of his pension, and provides fertile ground for union organizers.

Bill says he can get more from a young man, but he hasn't mentioned in what way. Certainly there are only a few jobs in a mill which require the extreme agility of youth.

But, there are many, many more which the steady hands of capable, mature people can master. (PB1103)

Quality Control Meetings a "Must"

"Quality Control Meetings"
(Pete & Bill, June 1946)

Dear Pete & Bill:

From what I have seen, quality-control meetings are a must in any well-run and well-organized mill.

The plant superintendent should sit down with his department heads for a short while each day; the length of time being dependent on the seriousness of the trouble then being encountered. At the end of the week, late on Friday afternoon, for example, he should have a final meeting at which he should recapitulate, in brief form, the daily discussions of the week and the solutions evolved or the advances made toward solution.

At all of these meetings, the department heads should speak freely, without fear of personalities, so that the cause of the trouble may be quickly located and the trouble rectified as soon as possible.

Any man who holds the position of a department head should be wise enough and man enough to know that if discussions of this type enable him to locate and correct irregularities in his own department, he should be pleased rather than hurt. One should still remember that "sometimes you can't see the forest because of the trees."

Of course, the plant superintendent would have to act as a firm and impartial, as well as impersonal, chairman at these gatherings. He would also have it definitely understood, at the very beginning, that they were out to locate the sources of troubles so that they might be corrected, and not to put anyone "in the bag." This attitude must be permanently maintained. After a short while impersonality will be automatic and much will be accomplished in a short time. (PB 1104)

Mothproofing Wool in Europe

MOTHPROOFING OF WOOLEN MATERIALS IN EUROPE, by Werner von Bergen and others; Textile Research Institute, New York; 28 pages, $1.50.

This presentation is the result of visits to three German plants and to the Wool Industries Research Association at Leeds, England. The study surpasses anything previously published in this country, particularly in its morphological aspects. The anatomy and life-cycle of the moth are thoroughly analyzed. Microscopy has been skillfully used in disclosing the operations of the larva and in presenting interesting views of bitten and partly eaten animal fibers. Several photomicrographs in true colors disclose the digestive processes of a larva fed with litmus-dyed wool. These show that at first the wool is dissolved in an alkali medium but is later reoxidized in the last part of the intestine. The pictures also show undigested rayon fibers. A research on the effectiveness of Eulan as a mothproofing agent is reported, and it is said that experimental evidence supports the theory that the treatment imparts a smell or taste repulsive to the larva. Efforts to make the larvae eat the treated wool by adding attractive (to the larva) smells or tastes were not very successful, but in several rare instances small pieces of treated wool which were eaten showed no signs of disintegration by the fluids of the larva's digestive tract. The section on the larva's activities is by Dr. H. Renmuth, microscopist at I. G. Farben, Hochst, translated by Dr. H. Luttringhaus of General Dyestuff Corp. M. L. Crossley of Calco Chemical Div., contributes a section on the chemistry of the Eulans.

A Manual on Statistical Quality Control

STATISTICAL QUALITY CONTROL, by Eugene L. Grant; McGraw-Hill Book Co., New York; 564 pages, $5.00.

This book is a working manual for operating the statistical techniques that can be widely used for reducing costs and improving product quality. The book is aimed at the supervisor, engineer, and management in general rather than the professional statistician. Spectacular savings effected by certain wartime applications resulted in excess enthusiasm in some fields, but the author believes that statistical quality control is a most useful tool for solving many manufacturing problems that cannot be solved so well by any other known way. The statistical concept of frequency distribution, with methods for calculating average and standard deviation, is clearly presented. Among the examples analyzed are several textile situations, one a shift in process average of acidity of dye liquor for woolen yarns, and another a shift in quality level of the tensile strength of a yarn.

Elements of Knitting

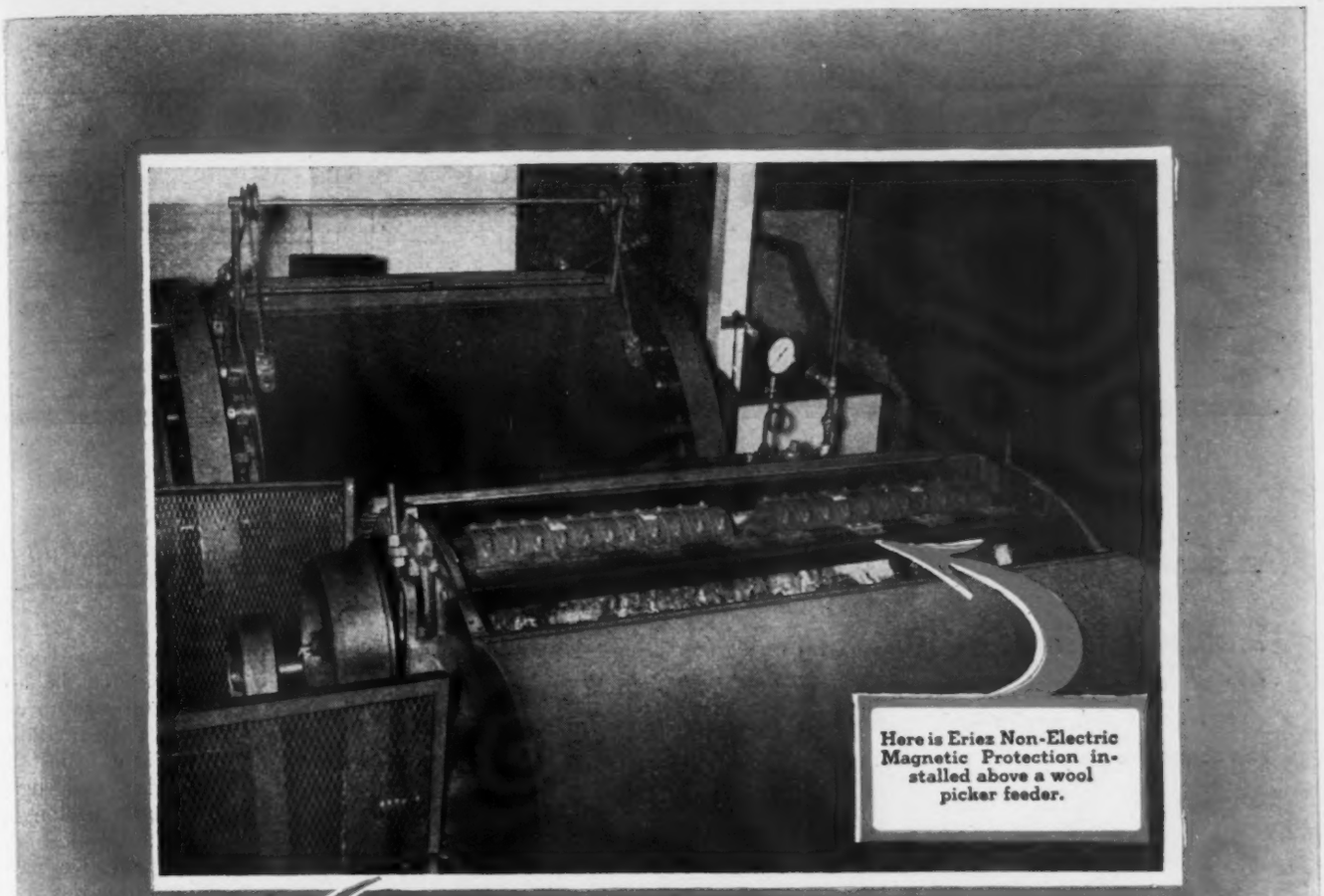
PRINCIPLES OF KNITTING, Vol. 1, by William E. Shinn; Clark Publishing Co., Charlotte, N. C.; 160 pages, $3.00.

The author is head of the knitting department of the School of Textiles, N. C. State College, and the book is from a revised manuscript used in teaching knitting. The material is elementary and it is planned to supplement it with more advanced material dealing with modern machines. An appendix gives useful data on standard hosiery sizes, needle gages, and a glossary of knitting terms.

Survey of Full-Fashioned Industry

STATISTICAL SURVEY for the year 1945, Textile Machine Works, Reading, Pa.

This is the 16th survey of the full-fashioned knitting industry of the United States. It contains tables and charts covering machinery, mills, materials, markets, and men. This book is issued after a lapse of four years when the Textile Machine Works facilities were concentrated on war production. The full-fashioned industry has shown a decline in number of machines in place, partly because there were no replacements from 1942 until late in 1945. Since 1942, 50% of the 39-gage machines have been scrapped and 25% of the 42-gage. The total 11,548 machines in place are divided as follows: 44%, 45 gage; 36%, 42 gage; 10%, 51 gage; 5%, 39 gage; 3½%, 48 gage; 1½% 54 gage. Only 24.2% of the existing equipment has been installed in the last 10 years.



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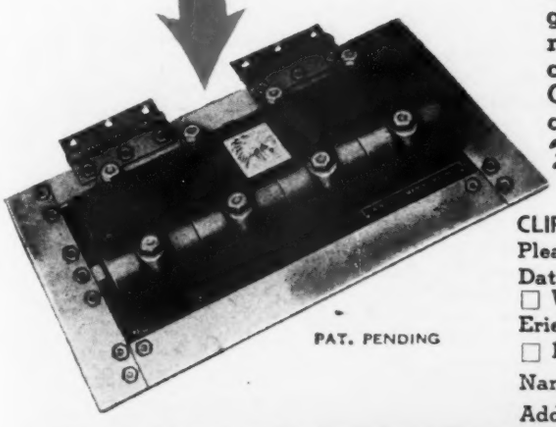

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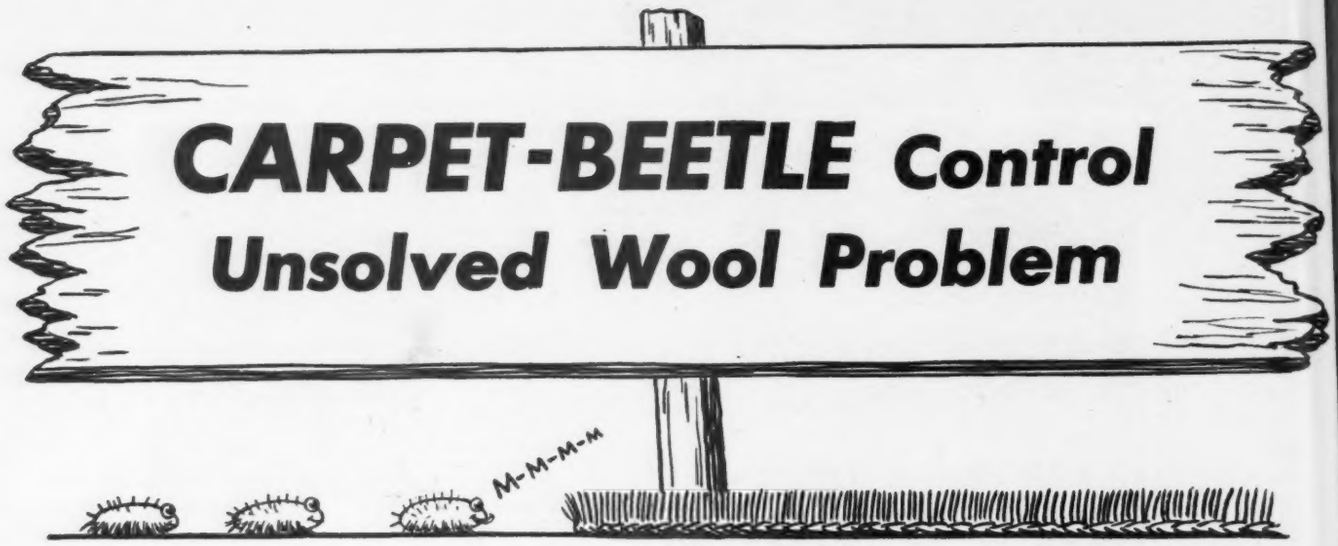
CARPET-BEETLE Control Unsolved Wool Problem



HIGHLIGHTS: *Clothes moth is less resistant than carpet beetle—Exposure of latter's larvae to treated fabrics rarely kills over 50% and immunizes many which survive—Most known compounds suitable for application to fabrics are only partly effective.*

By HENRY N. MITCHELL

A COMPLETELY SATISFACTORY mothproofing compound for textiles has not yet been discovered. Extensive research on this problem has developed several very good products which have helped partially to check the ravages of moths and carpet beetles. While not 100% efficient, these products do reduce the amount of damage and give longer life to woolen or mohair fabrics in the home.

Promoters often paint a much rosier picture for mothproofed upholstery materials, clothing, and home furnishings than actually is the truth. A guarantee or an insurance policy does not stop the voracious appetite and destructiveness of these pests, but it does help to convince the layman in a sales talk.

For the highest percentage of efficiency, it is a toss-up between certain of the metallic silico-fluorides and the dye-bath-applied organic compounds. The main advantage of the dye-bath-applied chemicals is their fastness to washing. They will stand five severe scourings in soap, alkali, and water without any great decrease in their proofing properties. Both types readily resist removal in the dry-cleaning process.

Products applied in the rinse bath after processing do not give so satisfactory a proofing as those applied in the dyebath. For certain types of materials, however, the rinse-bath application has its advantages which compensate for the decreased efficiency in the final product.

Some derivatives of salicylic acid, which have been patented by the author, have shown excellent repelling and proofing properties against both the clothes-moth and the carpet-beetle larvae. These chemicals may be applied during the dry-cleaning process or in an aqueous bath. Both methods give a final treatment that is fast to subsequent dry cleaning and light washing, but not to severe prolonged washing in soap, alkali, and water.

Some of the chrome derivatives have shown good proofing properties, but have the disadvantage of coloring the treated fabric. These could be used on heavy shades of dyed materials, but, of course, would be out of the question on light shades.

The arsenical derivatives have not shown any outstanding advantages; and, due to their generally poisonous properties, they ofter no attraction as moth-proofing compounds. Their use is not advocated by the Federal government.

CARPET BEETLE. The carpet-beetle larva, like most biological specimens, is an unpredictable and uncontrollable unit. Extensive test observations indicate that it can build up an immunity to the most toxic mothproofing compounds. The author has observed large, husky, carpet-beetle larvae, which have survived several exposures to treated materials, eat without apparent harm treated fabrics that have been chemically tested and pronounced satisfactory both by the manufacturer of the fabric and of the mothproofing compound. Many products are advertised as toxic to carpet-beetle larvae. The young larvae do readily succumb to many of these preparations, but very few of the older and larger ones die. In many cases they become logy but eventually eat the treated material and apparently completely recover. The general test procedure is to use ten worms to each individual exposure; the

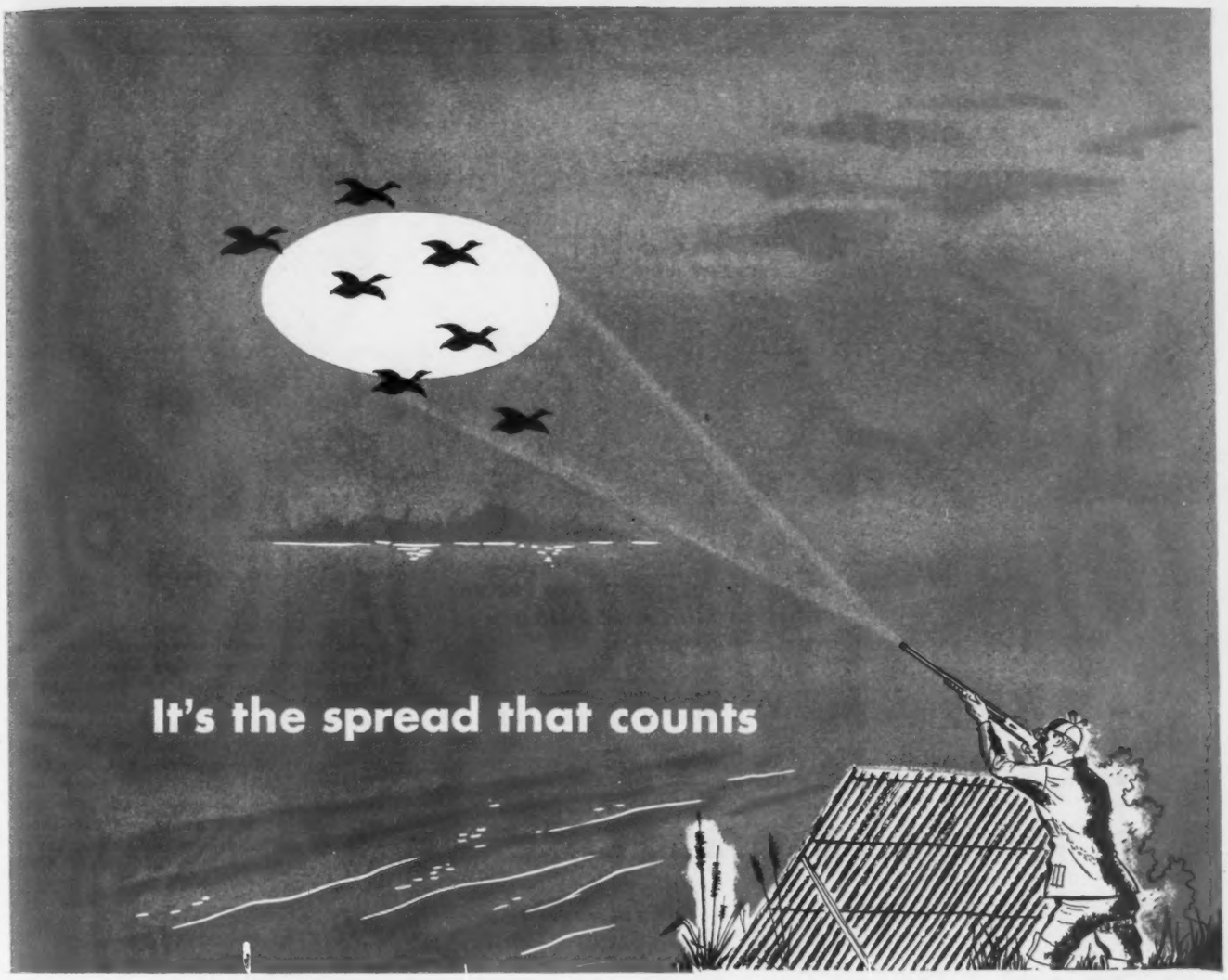
(*Continued on page 221*)

Mothproofing of Woolen Materials in Europe

• From information gathered by investigators who have visited Germany under the direction of Technical Industrial Intelligence Corps, it appears that the development of permanent mothproofing compounds in that country has achieved some success.

Some of these compounds are now available in this country, therefore the manufacturer, the distributor, and the user of textile materials will be interested in the published report by the above-mentioned team. This report includes papers by M. L. Crossley and Werner von Bergen, members of the investigating team. Information contained in this study should lead to a better understanding of the habits of the moth, which is a necessary background for the development of effective mothproofing methods and is of special importance to the research chemist.

The report, entitled "Mothproofing of Woolen Materials in Europe," is being published by the Textile Research Institute, Inc., New York.



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If you have de-sizing problems that require special attention, our technical staff will be happy to help you. For further information about Diastafor or our special service, write to Standard Brands Incorporated, *Diastafor Division,* 595 Madison Avenue, New York 22, New York.

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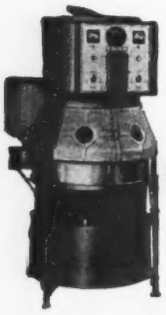

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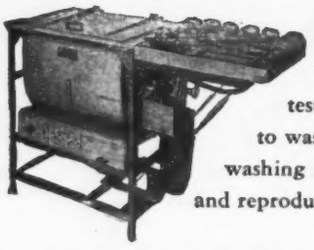

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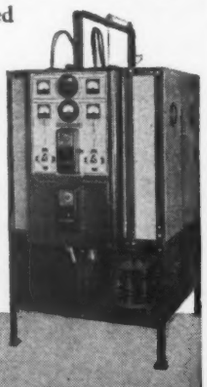

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The Round Table is designed to supply a meeting place where mill men can discuss problems among themselves. It is open to all readers for discussion of subjects relating to mill management and operation. Names of contributors to the Round Table will be held confidential if so requested, but sign contributions with your real name and address as evidence of good faith and to permit payment for items published. Address contributions to: Editor Round Table, Textile World, 330 West 42nd St., New York 18, N. Y.

Static Elimination Interests Chinese Mill Man

I was very much interested in your article about the static problems on textile-manufacturing processes [TEXTILE WORLD, June, page 110]. In my mill—a waste-silk spinning mill—static is a serious problem, especially on our roving frame.

On this machine, silk roving is drafted between two pairs of rolls, the front top roll being covered with hard rubber. The silk fibers, because of static, often cling to the rubber roll; or the roving puffs open between the rolls and the flyer, sometimes causing a break.

This problem can be improved only slightly by adjusting the humidity of the room, and I have long been inclined toward a neutralizer for solving the static problem. Fortunately, your article gave me some idea as to how to kill the static with an eliminator, using a.c. voltage, and an inductor bar. *(R-305) I. Lin Chow, Shanghai.*

Japanese Were Active In Building Machinery

I read with interest your editorial [A Lesson From Our Competitors, TEXTILE WORLD, July, page 4] on tex-

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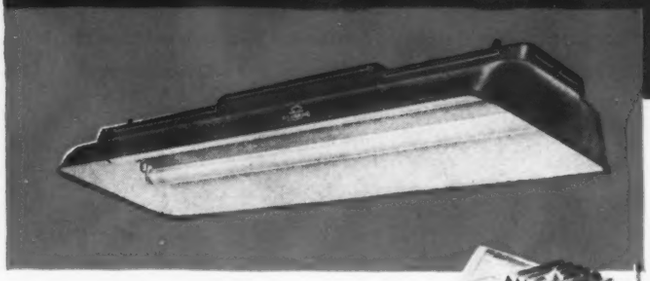

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tile conditions in other countries, as compared to conditions in our own country.

I have had a special interest in Japan's textile industry for many years, having for several years met practically all the Japanese textile men who came to the United States and having spent several months in Japan, at the request of the Mitsui people in New York, conferring with their cotton-textile manufacturers. While in Japan, in 1923, I visited nearly every mill there.

I found that the Japanese mills were quite interesting in getting the best results possible from their machinery and were at that time considerably disturbed by the attitude of some of the machinery manufacturers in the United States. These machine builders refused to sell the Japanese mills small numbers of machines, giving as a reason that the Japanese would then copy the machines and manufacture enough to meet their further requirements.

This attitude evidently arose from our ignorance of the actual situation. The Japanese were in no position at that time to do anything of the sort. They could imitate, but they could not copy. A certain Japanese, educated in the United States, had for several years—prior to and including 1923—been trying to form a company to manufacture spinning spindles. He had been unsuccessful because he was unable to find men who could read a blueprint. The men he could employ could make spindles. Yes! But they could not make two spindles exactly alike.

As to automatic looms, the Japanese did not imitate; they produced one of their own. A practicable loom it proved to be, too. It was under construction at the time I was there, and a few years later I had an opportunity of watching for several weeks a test being made in England of two English bobbin-changing, the American Northrop bobbin-changing and the Stafford shuttle-changing, and the Japanese shuttle-changing looms. The Japanese evidently were not afraid to step out among the best. *(R-306)*

Robert Burgess, Newton Centre, Mass.

Posters Produced Locally Aid in Relieving Monotony

Much has been said about the use of posters for accomplishing certain jobs, such as selling bonds, reminding workers of the importance of safety, plugging quality, economy, etc.; but one of the most important uses of posters is often overlooked: namely, licking monotony.

Unfortunately, certain basic condi-

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tions within the mill tend to make this task difficult. Only within narrow limits can changes occur in duties, surroundings, and responsibilities. As a result, labor turnover and inefficient workers may be too readily accepted as inevitable on certain monotonous jobs.

There is no over-all answer to so complicated a problem. My suggestion will bring perhaps a 10 to 20% improvement, which means that it is only a part of the constant fight against monotony. The idea can be summed up in two words: localized posters. Posters on general themes serve useful purposes, but they leave something to be desired in direct, local application. Interesting and colorful posters on purely one-mill or even one-department problems can do much to relieve monotony.

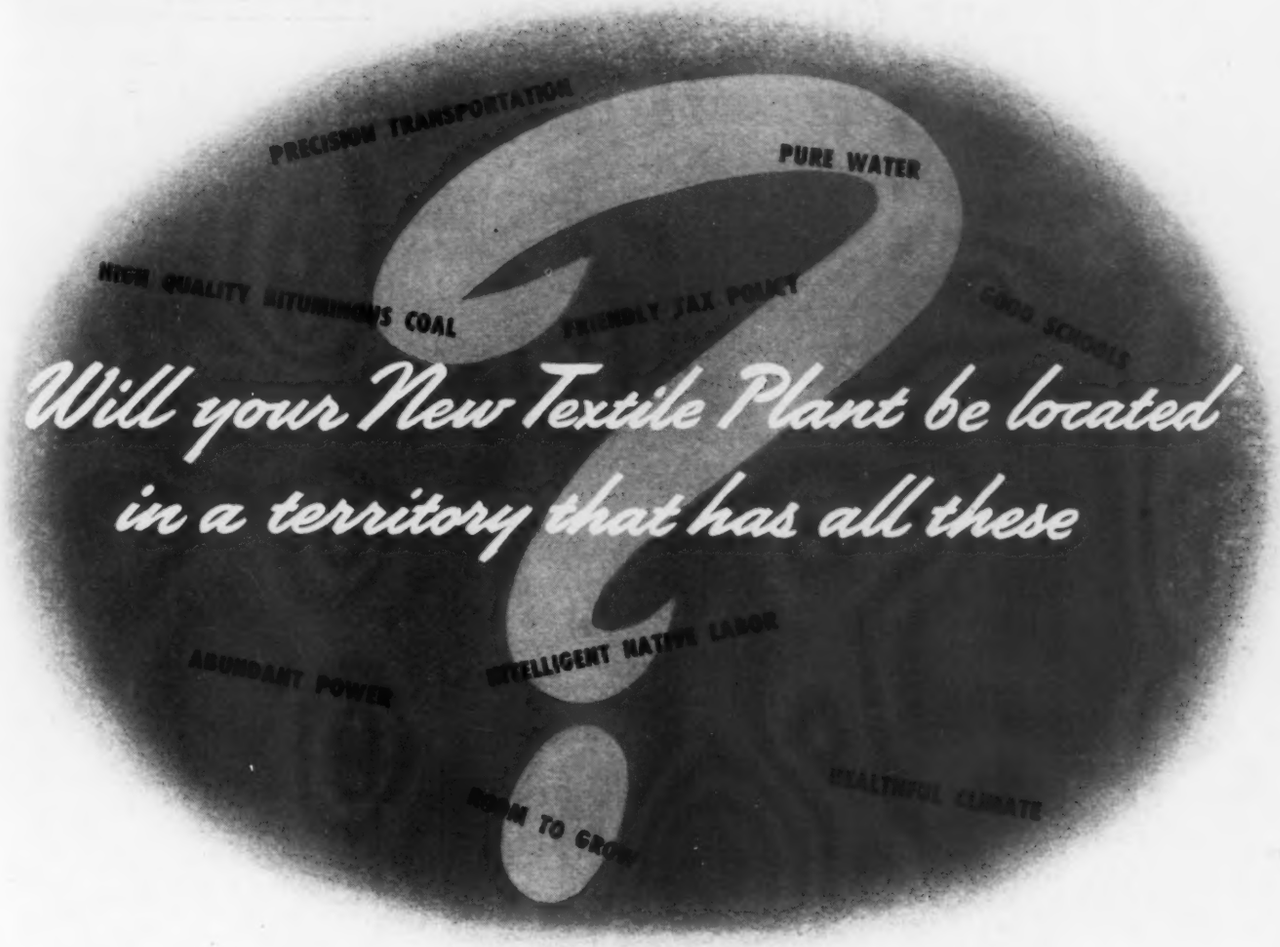
"Home-talent" artists should turn out these posters for the mill. No one in the mill will pass up a poster that Joe produced in his spare time, or that his son or daughter produced upon his suggestions. It will not be a work of art; yet it will draw five times as much attention as the production-line posters that have everything except local appeal. *(R-308)*

Each Type of Weaver's Knot Has Particular Use

Your article in the June issue on tying knots sets forth two definite methods of tying the weaver's knot and states that one method is recommended and the other is not. However, the article fails to present convincing proof that the method recommended is superior to the other.

The two conventional methods of tying the weaver's knot, as described in the article, were carefully studied by a group of mill men in a very large mill in Georgia in 1941-42. It was proved by actual tests that the knot you do not recommend, Fig. 1 (next page), is superior to the knot you recommend, both in ease of tying and in strength of the resultant cord. This statement does not apply to the "velvet" method nor to any other special method of tying the weaver's knot, since only the conventional methods of tying were studied.

We were manufacturing yarns of various constructions for webbing and were having complaints about slip knots and broken plies. These plies were breaking at the knots and "skinning" back at the loom reed. After very carefully studying all the manufacturing processes, we found that both the slip knots and the broken



Business-wise textile operators have spotted a new neighborhood for the plants they propose to build or relocate. It's Norfolk and Western territory . . . a vast, rich area between the Midwest and the Virginia Seacoast, midway between the North and the South.

Better look into this neighborhood before you take that textile plant off the drawing board. Here, your plant will have plenty of room to spread out. Here you'll thrive on a rich diet of high quality bituminous coal, an abundant supply of pure water and plenty of power. Plentiful, intelligent native labor will be right in your backyard . . . and a friendly tax policy will help your plant grow.

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So, if you want a good home for that new textile plant, don't overlook this neighborhood . . . Norfolk and Western territory — where there's plenty of room to grow.

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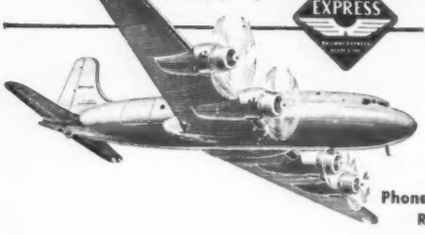

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plies were being made because of the method of tying the weaver's knot in the winding operation. This discovery led to a study of the two conventional methods of tying the knot. It was found that the method described by your article as "conventional", Fig. 2, permitted a slip knot to form more easily than the method that places both short ends on the same side of the knot, Fig. 1. It is recognized, of course, that any slip knot is basically a byproduct of the carelessness of the operator.

The supervisor had instructed the winder tenders to use the knot that places the short ends on opposite sides of the knot, Fig. 2. There is a second loop in the knot that must be pulled tight; and this loop has a tendency to crawl or slip over the point where the two ends interlace, thereby causing a slip knot to form. Furthermore, even when this knot is pulled down correctly, the resultant connection is weaker by 8% to 30% than a connec-

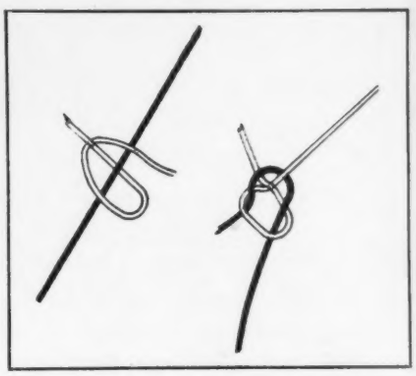


Fig. 1. This knot, which places both ends on the same side, was not recommended in the article in the June issue of TEXTILE WORLD; but author of the present article states that it is superior for plied, cabled, and other yarns where strength is desired.

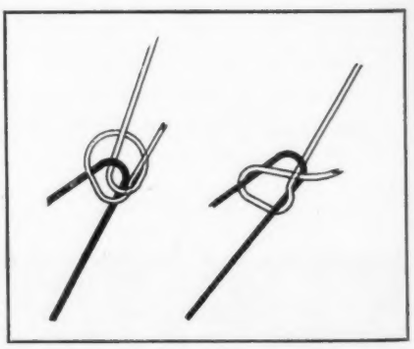
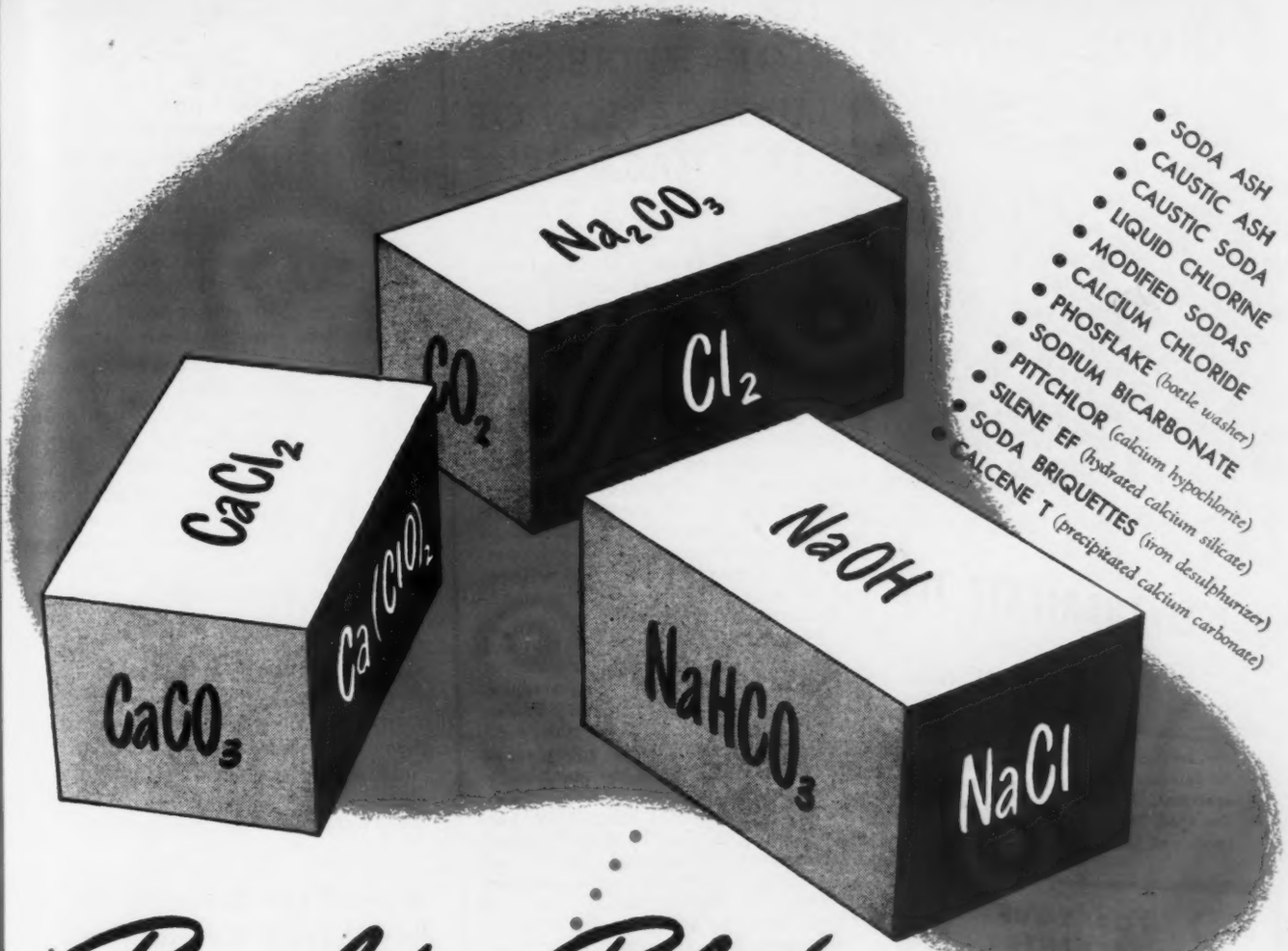


Fig. 2. This version of the weaver's knot, recommended in the article in TEXTILE WORLD, is said by the author of the accompanying article to be preferable for use only on single or other yarns where lack of bulk is a more important factor than strength.



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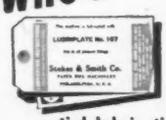

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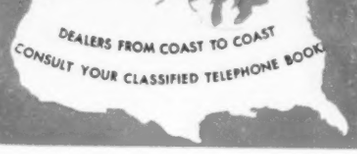


YOU CAN BE SURE OF CORRECT LUBRICATION OF YOUR MACHINERY

Machinery manufacturers go to great lengths in selecting lubricants that will assure the most satisfactory performance of the machines they build. Initial lubrication at the manufacturer's plant, however, will only affect the first stages of the machine's operation. Once the machine is sold or rented, subsequent lubrication will naturally influence the performance of the machine. Any excessive wear, malfunction, or frequent breakdowns of a machine, often due to faulty lubrication, will prove costly to the machine user and will reflect back on the machinery manufacturer.

Proper initial lubrication of machinery is undeniably important. But of even greater importance, especially to the machinery manufacturer, is the maintenance of original standards of lubrication in the field. To back up machinery manufacturers who use LUBRIPLATE for initial lubrication the "TAG PLAN" has been developed. It assures proper lubrication of Machines in Use. Before a machine leaves the manufacturer's plant a "tag" is attached. It fulfills three functions . . . advises proper type of LUBRIPLATE to be used . . . explains why this lubricant should be used for relubrication . . . provides postal for locating nearest LUBRIPLATE dealer.

When one of the tagged machines is delivered, the receiver and future user of the machine detaches postal from the LUBRIPLATE tag, leaving on the machine information about type of LUBRIPLATE recommended and points of application. He then mails the postal inquiry card to Fiske Brothers Refining Co. On receipt of this postal, they do two things. 1. They notify the nearest LUBRIPLATE dealer of this new machine in his territory. 2. They write to the machine user, giving him the name of his LUBRIPLATE dealer. Thus the machine user meets the LUBRIPLATE dealer and the manufacturer of the machine can rest assured of proper relubrication of the equipment.

Scores of machinery manufacturers have adopted LUBRIPLATE for the lubrication of their equipment because of LUBRIPLATE'S exceptionally high film strength, stay-put qualities, long-life, and its water, steam, and acid resisting properties. Since using LUBRIPLATE they have been able to guarantee smoother, more quiet performance, and longer life for their equipment and, therefrom are assured of valuable customer satisfaction. Adv.

tion made by the method of tying which places both short ends on the same side of the knot.

Tests were made on Henry L. Scott single-strand testing machines on knots tied in yarns ranging from 10/2 to 10/10/6 cable cord, including several hawser constructions of tire cord. In every case, the knot not recommended in your article was found to produce a stronger connection and resultant strand than the knot you do recommend. This fact is due, in my opinion, to the tendency of the loop to crawl while it is being pulled tight. In crawling or rolling into place, it bites into the part of the strand that the loop is around, thus producing unnecessary strain on one point and in some cases cutting plies or strands completely in two.

It is recognized that in some instances where bulk is a factor, the knot that places the short ends on opposite sides of the knot is desirable. However, in most mills that use plied or cabled yarns the machine tolerances are usually enough so that neither of these knots would cause undue congestion or clogging. *(R-307) Ralph W. Plunkett, New Orleans, La.*

Mixed-Yarn Defects Result From Carelessness

Many defects in finished cloth are caused by mixed yarn, and such defects could easily be prevented if operators throughout the mill would exercise a little care in storing and handling yarn before it reaches the dressing department.

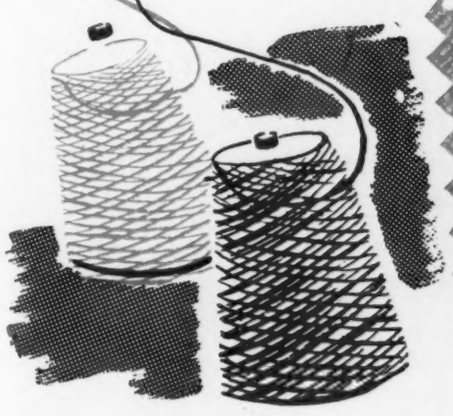
Cones and cheeses are generally kept in large bins which hold up to 2,000 lb. of yarn. It is advisable to have doors of some kind on these bins, and the dresser-room supervisors should see that the doors are kept closed, except when yarn is being put in or taken out of the bins.

Every package of yarn should be inspected as it is removed from the bin to be taken to the dressing frame. The dressing-frame operator should check each package as he ties it into the frame. Many mix-ups are started also when dressed yarn is taken from the dressing frame and dropped into a wrong box.

These are only a few of the places where yarn can be mixed. In our mill, we attempt to examine yarn for mix-ups at every process and to have every operator who handles yarn conscious of the possibilities of mixing it. Although we have reduced the number of cloth defects from this cause, we still have such defects. *(R-301)*

STANDARD CHEMICALS FOR THE TEXTILE INDUSTRY

Boil-Off Assistants	Pyrotex #121	Sulfonated Condensation product
Degumming Agents	Detersol	Soap and buffer salts
Detergents	Turpenol	Soap and solvents
Coning Oil	Nylon Oil #125 and #127	Nylon coning oil
	Stantex Coning Oil	Rayon coning oil
Delustrants	Duller W	Colloidalized pigment, light shades
	Dulstan	Colloidalized pigment, dark shades
Dye Fixing	Solidina	Alkyl aromatic addition compound
Dyeing Asssitants and Penetrators	Pyrotex	Sulfonated condensation product
	Dyeing Oil	Sulfonated oils and solvents
Dye Retarding Agents	Retardine	Special mix for vat colors
Emulsifying Agents	Emulsifier Base	Specially treated sulfonated oils and fats
Finishing and Weighting Compounds	Voile Finish	Full, firm body finish
	Finish #415	Silk and rayon satins
	Weighter Finish	Gums and weighters for silk and rayons
	Guminol	Wool and cotton weighter finish
Scrooping Agents	Scroop Oil	Special sulfonated and saponified oils
Size	Rayon Size	Blend of wax and gums
Staple Fiber Oils	Stantex #3005	Finishing oil for raw stock dyeing of staple fiber
	Stantex #3006	
Softeners	Standapol Oils	High sulfonated vegetable oils
	Stanteosine	Cation active softener
	Tallofin	Sulfonated tallow
	Rubinol	Sulfonated cocoanut oil
	Wax Cream	Blend of softening waxes
Splashproofing and Waterproofing Agents	Stantex Splashproof	Colloidal waxes and metal salt dispersion
	Stantex Waterproofing	Colloidal waxes and metal salt dispersion



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MANUFACTURERS' BULLETINS

***READERS** may secure copies of literature reviewed on these pages by using the post cards below. Fill out COMPLETELY one coupon for each piece wanted.*

Free FOR THE ASKING

1. Silicone fluids DC702 and DC703 for use in high-vacuum diffusion pumps are discussed in a pamphlet issued by Dow-Corning Corp. The pamphlet contains physical property tables, vapor-pressure curves, and a graph of pumping speeds for the fluids.

2. Therm-O-Tile underground pipe conduit, its features, advantages, installation details, and specifications are described in a 4-page bulletin published by H. W. Porter & Co.

3. Textile finishing machinery, bleachery equipment, textile testers, and industrial cooling fans are illustrated and described in a 53-page brochure published by B. F. Perkins & Son, Inc.

4. Self insurance, describing ways in which to save up to 75% of workmen's compensation insurance cost, is described in a booklet published by Insurers' Service Corp.

5. A liquid industrial adhesive, No. 4665, which requires no catalyst or special preparation for use; requires no thinning; and can be applied by brushing, roller coating, knife coating, or dipping, is described in an 8-page bulletin published by E. I. du Pont de Nemours & Co., Inc.

6. Canvas covers for trucks and trailers and methods of ordering custom-made truck covers without taking trucks to the shop for measuring and fitting are described in folder M.I.46, published by Webb Mfg. Co. Diagrams provide for all truck and trailer body sizes.

7. Snap-action switches for manual safety control of air presses, punch presses, hydraulic presses, and for other control applications are described in Data Sheet No. 38 published by Micro Switch Corp. Characteristics, mounting requirements, electrical ratings, and price data on the various styles of switches are given.

8. Pneumatic roll pickers designed for removal of lint and fly from top rolls and other parts of roving frames and spinning frames, especially long draft, is described in a 4-page folder published by M-B Products.

9. "Facts and Figures About Atlanta" is the title of a pocket-size booklet published by the Industrial Bureau of the Atlanta Chamber of Commerce, Atlanta, Ga. Interesting facts are given on this growing southern market.

10. Mechanics-length high-speed drills which are 15% shorter than the equivalent sizes of jobbers-length drills and correspondingly lower in price are described in a 4-page illustrated bulletin published by Republic Drill & Tool Co. Fractional sizes from 1/8 to 1/2-in. diameter and wire-gage sizes from No. 1 to No. 34 are catalogued.

11. "Your Life in the Machine World," a 60-page paper-bound book published by The Do All Co., describes the development of modern machines and how machines, backed by science and invention to utilize the power and resource of nature, bring modern comforts and better living.

12. Grid unit heaters with high-test cast-iron heating sections are described in a 12-page illustrated booklet published by D. J. Murray Mfg. Co. The booklet gives details and capacity tables on the different models, describes features of design and construction, and explains the high-corrosion resistance of the units.

13. Flow-rate instruments for high pressure and temperature are described in Catalog Section 40-A, published by Fischer & Porter Co. Included are data relating to selection, size, and dimensions of a variety of flow-rate instruments. Recording, controlling, integrating, remote, and close-coupled instruments are also described.

14. Infrared radiant-heat generators for use in drying, carbonizing, pre-heating, polymerizing, singeing, curing, and baking, and utilizing controlled temperatures from 125° to 2500° F. are described in a 4-page folder published by Carbomatic Corp. Illustrations include photos of applications in singeing and tentering.

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better working environment is described and illustrated in a 32-page, four-color illustrated booklet published by E. I. du Pont de Nemours & Co., Finishes Div. A coordinated functional color program for an entire plant is illustrated in a double-page cutaway drawing.

16. Remote indicating and control systems, what they are, and what they are capable of accomplishing are explained in a 12-page bulletin published by Allis-Chalmers Mfg. Co. How the transmitters, receivers, and indicators of such equipment are constructed, how they work, their specifications, and their advantages are graphically presented with photos, diagrams, and charts.

17. Metallic stearates, their properties and uses as lubricants, frictioning agents, flame retardants, waterproofing agents, de-emulsifying and emulsifying agents, are described in a manual published by Mallinckrodt Chemical Works.

18. Generators and motor-generator sets in capacities from 50 watts to 200 kilowatts are described in an 8-page leaflet, Form 646, published by Century Electric Co. Both a.c. and d.c. generators are illustrated and described; motor-generator sets are for a.c. to d.c., d.c. to d.c., or d.c. to a.c. service.

19. "Sixteen Case Studies" is the title of a publication issued by Packaging Institute, Inc. Described are case studies of packaging processes selected for their wide variety and broad use.

20. Repair and construction of floors that are subject to acid, greases, oils, and severe abrasion is the subject of a folder titled "Tough Floor Problems?" issued by Stonhard Co. The folder also discusses the patching of spalled concrete, pointing and resetting of brick or masonry, and repair and construction of foundations and retaining walls.

21. Plastic refractory mortar for resurfacing furnace brick work and designed to resist slagging action, flame erosion, corrosive gases, and abrasion is described in Bulletin 315E, issued by Quigley Co. The material is reported as producing a tough, natural refractory facing.

22. Textile chemicals, including detergents, water-repellent finishes, hosiery finishes, wetting agents, penetrants, softeners, and soaps, are described in a 12-page folder issued by Amalgamated Chemical Corp.

23. Bob-Cat electric cable hoists, their features, characteristics, and specifications are described and illustrated in a three-color, eight-page bulletin published by Lisbon Hoist & Crane Co. Fourteen standard features are described, and four mechanical and electrical extra-service features are given.

24. Variable-speed drives, both horizontal and vertical models and including variable-speed transmission, vari-speed motor drives, and vari-speed motor pulleys, are described and illustrated in a 12-page folder published by Reeves Pulley Co.

25. Concrete maintenance is discussed in issue No. 9 of "The Trowel," published by Master Builders Co. Causes of concrete disintegration, how to make concrete repairs, controlling shrinkage in machinery grouts, building restoration, waterproofing, protective sealing, and decorating are subjects covered.

26. Diaphagm valves for use with corrosive fluids and solids or where leakproof operation or non-contamination of products is desired are described in Catalog 1-F, 1942, published by Grinnell Co., Inc. In addition to a description of the valves, the booklet contains tables showing metals and materials recommended for use with various corrosive liquids.

27. Intercommunication systems, available in units of 10, 20, 30, 40, 50, 60, 80, and 100 stations, and in a variety of selective-station and combination systems are described in a 12-page catalog published by Talk-a-Phone Co.

28. Automatic boiler-feedwater control, Type 15 K-1, is described in Bulletin 104-C, issued by Combustion Control Corp. Also described is the low-water safety feature which is part of the device.

29. "How Fog Was Dissipated in a Textile Plant" is one of the subjects covered in Vol. 10, No. 4, of "Weather Magic," published by Crane Co. The story describes the elimination of a serious condensation and erosion condition at a large southern bleachery.

30. "Drills—How to Sharpen Them" is the subject of a 24-page manual published by Republic Drill & Tool Co. Proper care of twist drills, correct sharpening of drills, pointers on sharpening and web thinning, and dimensions and angles of proper points for best results in drilling various materials are given in the manual.

31. Approved equipment for fire protection and devices involving fire hazards are listed in Bulletin No. 90.00A, published by the Associated Factory Mutual Fire Insurance Cos. New listings included are cans for gasoline and other hazardous liquids, control panels for fire-pump motors, fire doors and shutters, fire extinguishers of various kinds, fire-extinguishing systems, magnetic separators, and concrete-insert sprinkler hangers.

TO GET MORE INFORMATION

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Model LGVH-2
2000-lb. capacity.
Pneumatic tires.

for BULKIER, LIGHTER loads

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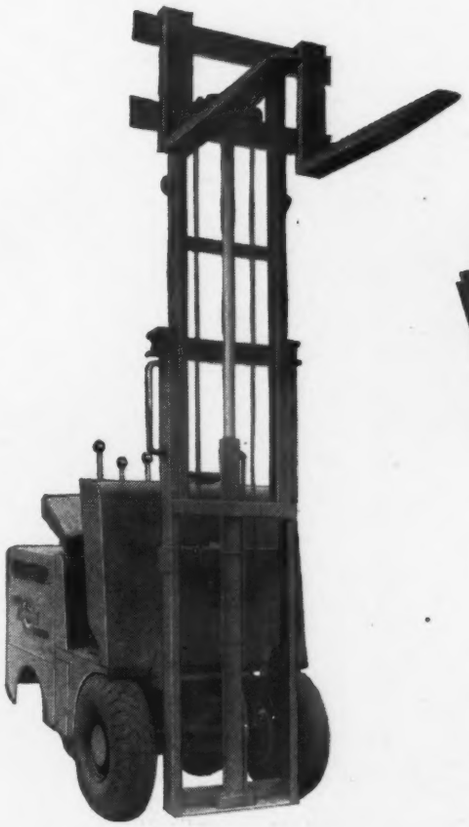

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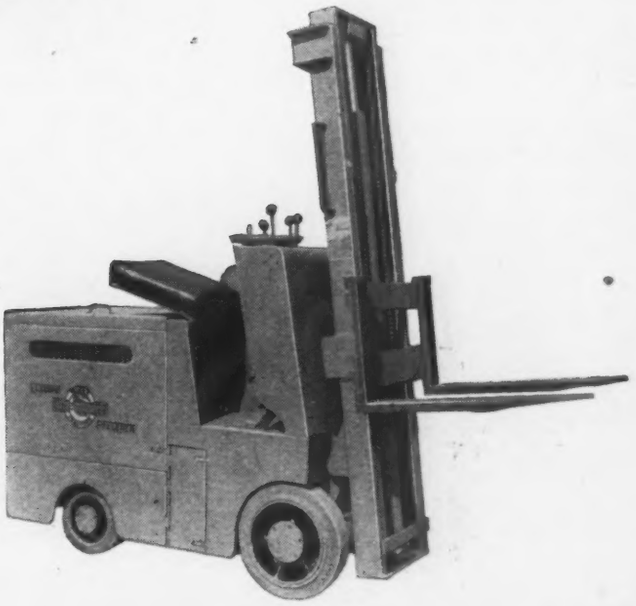

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Questions and Answers

Lower Speeds Necessary For Running "Straw" Yarn

Technical Editor:

We would like to know something about the running of Delaware Rayon's bright Delvisca. This is a single-filament yarn, very wiry and similar to a heavier yarn used in the millinery trade and known as "straw yarn." We have been advised that if this yarn is allowed to gather the normal humidity of the mill it will be flexible enough to use. We have tried a small amount of the yarn and find that it will not absorb enough humidity to become flexible. It seems that the yarn requires a considerable amount of moisture or some soluble preparation in order to make it more pliable. Do you know of anyone who is running this special yarn, either as warp or filling, and just how they go about it? (9139)

Delvisca, or the so-called "straw" yarn, is a relative newcomer to the synthetic field; and handling it presents problems entirely different from other, more commonly used synthetic yarns. You did not indicate the processing system under which you operate; therefore, this answer must be of a somewhat general nature.

As you suggested, the difficulties encountered in running this yarn arise primarily from its brittleness or lack of flexibility. Naturally, humidity will greatly affect this property of the yarn. One mill which successfully runs various kinds of fibers and which has experimented considerably with Delvisca maintains a relative humidity of 64% at a temperature of 85° F. The experience of the mill is that this atmospheric condition does not reduce the brittleness of Delvisca sufficiently to permit processing as other synthetic fibers are processed.

To run Delvisca with any degree of success, this mill has found that processing speeds must be drastically reduced. It is not practicable, for example, to warp the yarn at the usual speed on a high-speed warper or a direct beamer. The yarn "strips" easily; and when it is pulled through guides or tension devices at high speed,

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YOU DIDN'T LEAVE ME FINISH BEFORE YOU BUTTED IN!
OH, IT WAS TERRYBUL! AWFUL! ALL TALKIN' AT ONCET-- WHAT A MESS!
AY DUN'T TANK DIS COMMITTEE EES DO SO MOOCH GOOD, FROM DE LOOKS!
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ESIDENTS OFFICE
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J.R. WILLIAMS
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SOL-SPEEDI-DRI REDUCES THE DANGER OF FIRE IN TEXTILE MILLS

FIRE is always a deadly possibility in any industry . . . but in textile mills there is a condition that makes this possibility even greater. Lint, collecting in the oil and grease from spinning, weaving, picking, and carding machines, completes the combination that can lead to fiery disaster.

SOL-SPEEDI-DRI, the white, granular oil and grease absorbent, materially reduces the ever-present danger of fire in textile mills by soaking up oil and grease from floors. SOL-SPEEDI-DRI will not readily burn, even when oil-soaked. When spread over slippery, oily surfaces, SOL-SPEEDI-DRI forms a carpet of safety that helps prevent falling and slipping accidents. Sweep it up, and floors are left clean and safe—safe for walking, safe for working.

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QUESTIONS AND ANSWERS

it has a tendency to break excessively. Although the yarn can be warped on a slow-speed warper or on a high-speed warper at a low rate of production, the resulting decrease in output considerably increases the cost of warping.

Delvisca filling can be woven satisfactorily at loom speeds of 150 to 180 picks per minute. Tension on the filling must be kept as low as possible without permitting the filling to balloon when the shuttle is checked. Otherwise, filling will break so often that loom efficiency will show a serious drop.

Rough cloth, looped filling, and broken picks are the defects most frequently encountered in weaving a fabric of Delvisca. Broken picks can easily be increased by the stop-motion feeler tips, particularly if the tips are somewhat sharp or rough. Very light fur, preferably muskrat, should be used in the shuttle.

If you are operating shuttle-changing or non-automatic looms, you probably will obtain better results by using dead tension rather than ring tension. If rings are used, all the rings except two should be cut out and the filling run from the second ring directly to the bead. It may even be desirable to leave only one ring, so that the filling must travel around the minimum number of turns.

Because of the structure of Delvisca yarn, cloth woven of it has an appearance of overbeating; and small, unfilled spaces will show in the cloth when it is held up to the light. So far, this particular mill reports, these two details of appearance have not been overcome.

Gum Arabic Solution Stops Sloughing Off

Technical Editor:

As rubber-goods manufacturers, we have a problem in braiding rayon yarns as reinforcement in the carcass of hose and also as a covering. Due to what we call the slipperiness of the yarns, it unwinds unevenly off the spools, especially at the tops and bottoms of our yarn packages. When the yarn is used in the carcass of the hose, we can decrease this trouble by painting the ends of the package with rubber cement; but this practice cannot be followed when the yarn is used as an outer cover and forms a distinct braided-color pattern. Can you give us a formula for a transparent binding solution that we could paint on the ends of the package to avoid this trouble?

We have been advised that a "pineapple" wind might be the solution to our problem; but our textile suppliers here (Canada) do not seem to be familiar with this method of yarn put-up, and we doubt

For color control in package dyeing start with Kidde control in package winding

To assure accurate shades in package dyeing, wind your packages with the *Kidde* Tension and Density Control!

The *Kidde* Control, installed on a Universal 50 Winder, maintains uniform tension and density throughout the package—and duplicates the conditions in *every* package.

Since the *Kidde* Control *feeds* the yarn to the package, tension can be held to extremely low values. Pillow-soft packages can be wound, allowing shrinkage room for the yarn in the dye bath.

Write for further information.

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FREE BULLETIN describes operation of the *Kidde* TENSION and DENSITY CONTROL

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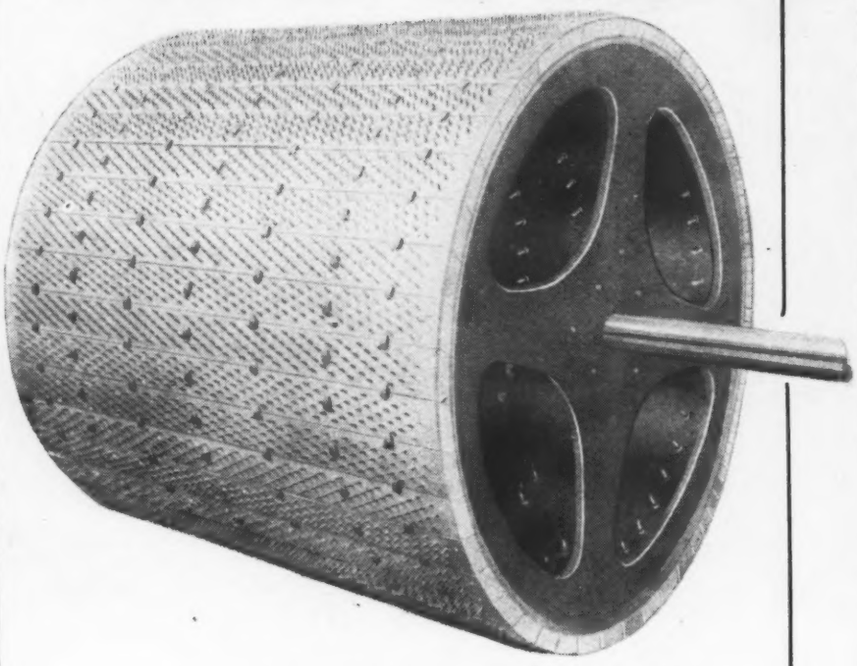
PINS AND LAGS



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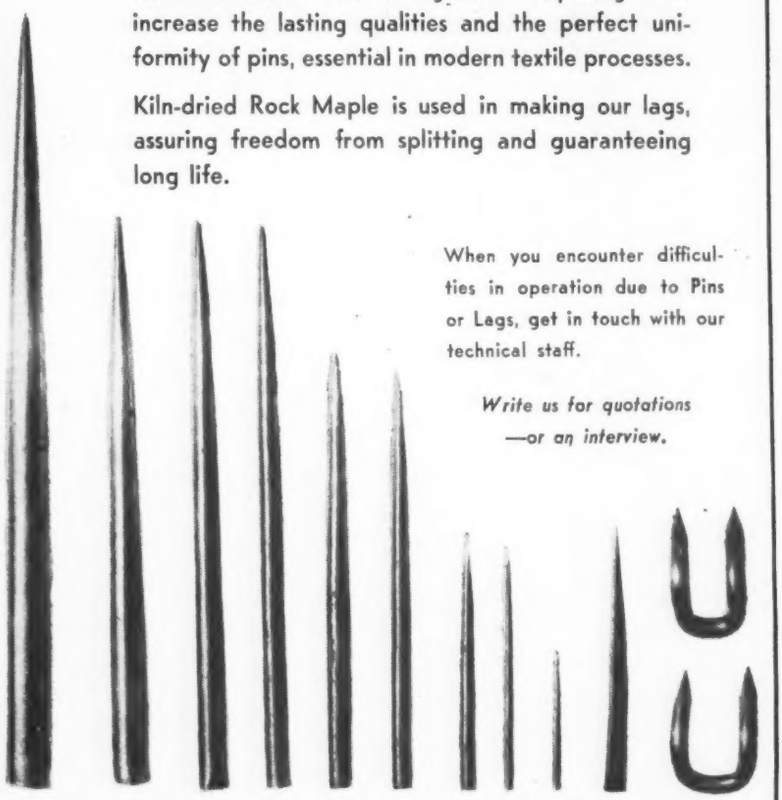
New methods of hardening and tempering steel increase the lasting qualities and the perfect uniformity of pins, essential in modern textile processes.

Kiln-dried Rock Maple is used in making our lags, assuring freedom from splitting and guaranteeing long life.



When you encounter difficulties in operation due to Pins or Lags, get in touch with our technical staff.

Write us for quotations —or an interview.

WILLIAM CRABB & CO.

301 3rd AVE. NEWARK, N. J.

that we can obtain our yarn in this form at present. (9140)

It is not clear what kind of equipment you are now using or how the braider supply is being wound. Presumably, your supplier is furnishing square-end packages, and the yarn is falling over the edges of them. If this is the case, the condition probably could be remedied by having these tubes of yarn wound with tapered ends with a building attachment similar to the "pineapple" attachment used in coning.

If your supplier cannot change his present wind, you may be able to reduce the sloughing off at the bottom of the yarn package by setting the tube on a soft pad so that the nap or tuft of the pad rests against the yarn. Such a pad could also be used on top of the yarn package, if you could arrange it so that it would not interfere with unwinding.

There are adhesive solutions on the market which will alleviate your problem. It is difficult to recommend exact amounts of adhesive to use, but as a starting point you might try a 25% solution of gum arabic. This solution could be painted on the ends of the yarn package, and it would in no way affect the color pattern of the braided product. Methocel solutions might also be satisfactory.

What Is Best Twist For Plying Cotton Yarns?

Technical Editor:

What is the most suitable twist (in turns per inch) for plying cotton yarns into 2-, 3-, and 4-ply weaving yarns in order to obtain maximum strength and the best appearance in such standard constructions as twill and heavy and light duck? What is the average percentage of single-yarn-length contraction when inserting this twist? (9130)

A question of this nature is rather difficult to answer directly because of the many factors involved. Some of these factors include such things as length of staple; preparation in the opening, picking, carding, drawing, and roving processes; twist in the single yarn; and perhaps other factors. Also, the construction of the goods and the way they are woven on the looms play a definite part in the strength and appearance of the finished fabric.

Some users of mechanical fabrics specify the twist to be inserted in the plied yarns, others require enough twist to prevent "linting," and still others permit the use of "standard" twists.

If convenient, you should make several samples of plied yarns, using vari-

Don't think

it's small change

True, the wood, leather and metal parts of textile machines don't change *much* when temperature and humidity vary. But they *do* change. And even a slight variation is often enough to throw a machine out of adjustment. Over a year, the cost of these little adjustments can absorb a big chunk of your profit. It's far more economical to install Carrier Air Conditioning.

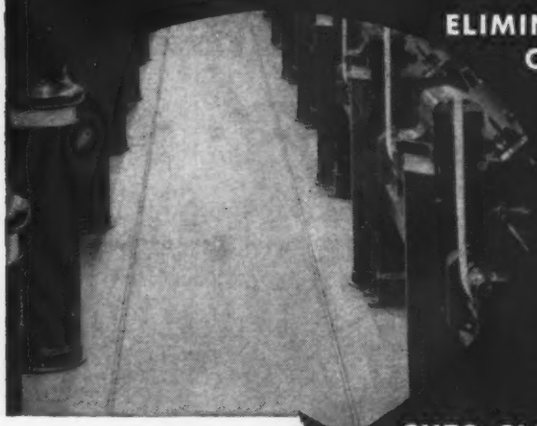
This scientifically designed air conditioning gives you close control of temperature and humidity the year round. It not only helps keep machines in perfect adjustment . . . it reduces static electricity and yarn breakage, and keeps down the amount of "fly" in carding. You get more uniform quality at lower cost. Carrier Air Conditioning speeds production, too. Employees work better in a mill where temperature and humidity are held to comfortable levels both winter and summer.

Only superior engineering skill and experience can build air conditioning to do all these things. Carrier is the most experienced in its field, for Carrier *created* air conditioning. Its engineers have been helping the textile industry boost output and improve quality for over 40 years. They are always glad to study textile problems and make recommendations. Carrier Corporation, Syracuse, New York.

Carrier

AIR CONDITIONING
REFRIGERATION
INDUSTRIAL HEATING

What TENNANT DRY CLEANING can do for your MILL FLOORS



ELIMINATES SCRUBBING OF WOOD FLOORS

•

IMPROVES WORKING CONDITIONS

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REDUCES FLOOR HAZARDS

•

CUTS CLEANING COSTS

When we asked many mill executives in the South and New England to list the chief benefits obtained by *dry* cleaning their floors with the Tennant System—we got the answers you see above. And the replies showed almost 100% agreement, even in different types of mills.

This careful, unbiased survey pulled no punches; we wanted *facts* and we got them. The results show what *your* mill can accomplish in restoring dark, oily floors to "like new" condition—**clean, smooth, bright, non-slippery and resistant to dirt and wear.** If you want to improve working conditions, get rid of messy scrubbing and its hazards and cut maintenance costs, too, then get the facts about Tennant dry cleaning today!

OIL COVER PAINT

Hard-to-get-at floor sections under machinery, etc., can be kept gleaming with Tennant 201 Oil Cover Paint. Dries over oily surfaces.

Keeps Floors Bright

Promotes Safety

Is Easy to Use

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G. H. TENNANT CO.

2586 Second St. N., Minneapolis 11, Minn.

ELIMINATE SCRUBBING WITH THE TENNANT SYSTEM

The way to finer floors

TENNANT

Floor Maintenance System

ous twist multipliers, and test them on a single-strand tester, preferably an inclined-plane tester. Select the two or three yarns which show the best strength and appearance, make up enough yarn to weave a few yards of cloth from each, and test the cloth samples for strength and appearance.

The following twist multipliers would be good starters (for 1-in. cotton) for these tests:

	Warp	*Filling*
2 ply....	4.00	3.00
3 ply....	3.50	2.75
4 ply....	3.00	2.50

For example, a 7/4 yarn is equivalent to a 1.75 yarn. The square root of 1.75 is 1.323, which multiplied by the twist multiplier of 3.00 equals 3.97 turns per inch to be inserted in the yarn. For a shorter staple, a slightly higher twist multiplier would probably be indicated, while for a longer staple the twist multiplier could be somewhat lower.

On a number of twist tests to determine the single-yarn-length contraction in plied yarns, the 2, 3, and 4-ply results were just the opposite from those which might be expected. When the ply twist was removed by means of the twist tester, the single yarn was 1.0% to 1.5% shorter than the length of the plied yarn inserted in the clamps of the tester. For the heavier plies, 5 to 7, there was an elongation of 1.0% to 2.0%, and in some cases more.

The reason for this pecularity is, of course, that in inserting S twist in Z-twisted single yarns, 1.0 to 1.5% more Z twist was removed from the single yarns when plying them 2, 3, or 4 times than S twist was inserted. However, in the heavier plies the single yarns were wrapped around such a large core (the diameter of the plied yarn) that the take-up in length of the single yarns was greater than the let-off in length caused by the S-twisting of Z-twisted yarns.

Correct Positions For Timing Gill-Box Cams

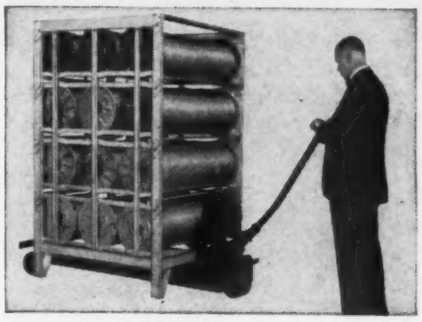
Technical Editor:

Can you provide me with a formula for calculating screws and timing the cams of a gill box? (9138)

There is no formula in general use which will serve your present purpose. To time the cams, put them in exactly the same positions on both sides. If placing them in this manner is not possible, you may have to take the bevel gear off the driving shaft and cut a new keyway in a different place on the shaft.

RAYON REPORTS

Prepared Monthly by American Viscose Corporation, New York, N. Y. NOVEMBER, 1946



IMPROVED RACKS FOR ACETATE TRICOT SPOOLS SIMPLIFY SHIPPING, HANDLING AND STORING

A recently developed steel container of the skid-rack type, that greatly facilitates handling, storing and shipping of acetate tricot spools, has just been introduced by American Viscose. Similar containers now extensively used for beamed yarn have already demonstrated the greater economy and efficiency that the design affords over the old-style wooden boxes.

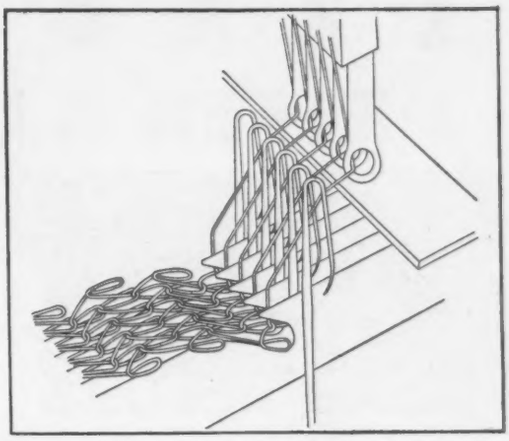
The new rack is in two sizes. One, holding four 21" spools, has overall dimensions of 3'7½" x 3'9" x 4'9". The other, for twelve 13¾" spools, measures 3'7½" x 3'9" x 6'1".

The rack incorporates simple-to-operate clamps that firmly lock the spools in place. And it effects noteworthy economies over older cases because of its ease of handling.

Representatives of American Viscose will gladly show customers the best way to avail themselves of the handling and other advantages that the unit provides.

New Book on Tricot Fabric Designing Shows Basic Facts of Stitch Patterns

Written by Thomas Johnson, Sales Manager of Aveco, Inc., a new book, "Tricot Fabric Design" (McGraw-Hill Book Co., Inc., 124 pp.) has just been published. It is basic reading for those interested in the fundamentals of tricot fabric designing, and desiring a clear understanding of the drafting of tricot patterns.



One of a series of 20 detailed, three-dimensional drawings which show the tricot machine's knitting elements in their relative positions during the stitch cycle.

Photographs and three dimensional drawings illustrate the book profusely. The drawings detail with exceptional clarity all the various knitting elements of the tricot machine in their relative positions during a stitching cycle.

Following descriptions of the knitting elements and warp beams, the actual formation of a simple stitch is presented step-by-step in another series of graphic drawings. Such subjects as Function of the Pattern Wheels, Drafting the Pattern, Two-Bar Patterns, and many more essentials in the study of knit fabric design are included.

With this basic knowledge of stitch patterns, the designer is in a position to utilize the extensive capabilities of the tricot machine.

RAYON...20 YEARS AGO

The largest American Flag ever made . . . will be of rayon! The entire ceiling of the Pennsylvania Hotel roof garden will be covered by it, according to plans for the coming American Rayon Exposition in New York.

A New York newspaper wag quips that if they keep on making more and more "silk" out of wood, we'll soon be able to use silk worms for bait!

The electrical industry is now one of the largest industrial users of rayon, among a growing number of industries which are finding rayon ideally suited for many needs.

MAKE USE OF 4-PLY SERVICE

1 PRODUCT RESEARCH
Helps you get the right yarn or fiber.

2 FABRIC DEVELOPMENT
Helps you design new fabrics.

3 TEXTILE RESEARCH
Helps solve production and finishing problems.

4 "CROWN*" TESTED
Helps provide scientific selling facts.

AMERICAN VISCOSE CORPORATION

America's largest producer of rayon

Offices: 350 Fifth Avenue, New York 1, N.Y.; Charlotte, N. C.; Cleveland, Ohio; Philadelphia, Pa.; Providence, R. I.; Washington, D. C.; Wilmington, Del.

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*Reg. U. S. Pat. Off.

ADV.

LEADERS PREFER A LEADER

"Big name" manufacturers everywhere recognize the superiority and leadership of CANTOL BELT WAX.

Hundreds of the nation's largest industries, from coast to coast, in every kind of production, have been users of CANTOL for years.

Sold in every state through dealers and distributors.

CANTOL is a belt dressing which is also a belt food and preservative. Contains no harmful ingredients, seals out injurious foreign matter, is not oily, prevents stretch and flabbiness.

Cantol Belt Wax is a product of

CANTOL WAX COMPANY

Bloomington, Indiana

Cantol

FROM OLD MEXICO comes Candelilla Wax. Properly combined and rightly blended with other ingredients, it becomes CANTOL, the different, better belt dressing.

Mill Floors

(*Continued from page 141*)

of cement. The worst fault, however, was that such floors were very cold in winter. Installation of wooden-lattice platforms was tried, especially between looms, to improve the working conditions, but when an operator had to service more than four looms these platforms caused difficulties.

Asphalt floors, cork-rubber floors and combinations of cement with sawdust and other materials were tried and widely advertised; but none of these was really satisfactory. The maintenance expenses were high; and the floor either was not foot-warm, was too soft, or showed other disadvantages.

Eventually, it was realized that no material, not even steel-cement, could withstand the abrasive action of steel wheels. Wheels were then made with rubber rims in order to protect the floor. This development paved the way for a return to wooden floors in a modernized form. Based on work in a large number of textile plants, the writer eventually came to the conclusion that in parts of plants where dry processing takes place, a parquet floor laid in asphalt is the best and cleanest type of floor.

DRY-PROCESSING FLOOR. Before describing the details of one floor construction, it would be advisable to state why the design, which is equally applicable to basementless buildings and to upper floors of multistory buildings, was selected.

Heat losses through floors of basementless buildings are usually very high, but they are somewhat difficult to estimate because the temperature of the ground varies considerably. The outer temperature and the floor temperature do not vary to the same extent. A very interesting study of this question, made by the Bureau of Standards, has been published in Report BMS-103, of the Department of Commerce Building Materials and Structures booklets. The investigator who made the study concluded that the heat loss of a floor laid on the ground is not proportional to the difference between the air inside and the air outside at any given instant but depends on the temperature of the ground. In this writer's opinion, it is very much dependent upon the humidity content of the ground. The humidity content of the ground should have the greatest influence because conductance of heat depends largely upon humidity. It is therefore imperative to counteract this humidity by securing a foot-warm floor, and it is necessary to protect the construction

Installed in a commercial area of any size — the MILLER FLUORESCENT TROFFER LIGHTING SYSTEM gives you (1) perfect light for easy-seeing; and (2) a distinctive, impressive ceiling treatment. Good lighting is made an integral part of the architecture! Furthermore, you get a saving! The continuous wireway channels reduce wiring costs, conduit and conduit fitting costs, from 50% to 80%. The patented Miller Ceiling Furring Hanger improves and simplifies installation. The versatility of application of the Troffer System offers limitless design opportunity — CEILINGS UNLIMITED — while fulfilling its primary purpose — IDEAL LIGHTING.

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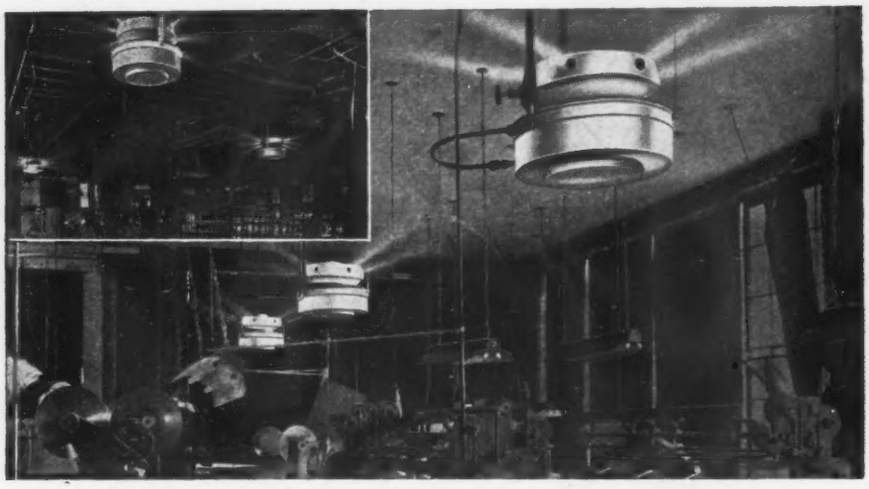
Fluorescent, Incandescent Mercury Lighting Equipment	Phosphor Bronze and Brass in Sheets, Strips and Rolls	Non-Ferrous Metal Castings	Domestic Oil Burners and Liquid Fuel Devices

Today a must

The Use of Synthetic Fibres Makes the Question of Proper HUMIDIFICATION of Paramount Importance!



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Rapid increase in the production of synthetic fibres emphasizes the need NOW for uniform, adequate and accurately controlled HUMIDIFICATION.

One-way, two-way, or multiple directional domes are provided, as required. Furnished complete, ready for immediate installation.

Get all the facts about WALTON Equipment. Send for your copy of "HUMIDITY." Coupon is provided for your convenience.

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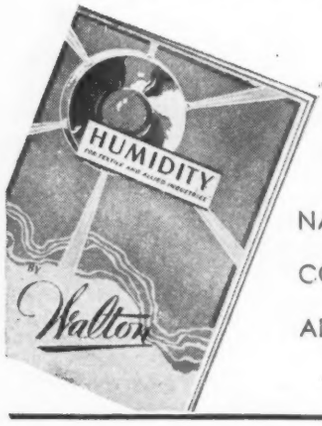

WALTON LABORATORIES, Inc., Irvington, N. J.
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ADDRESS .....

.....

T.W.

against the deteriorating action of this humidity.

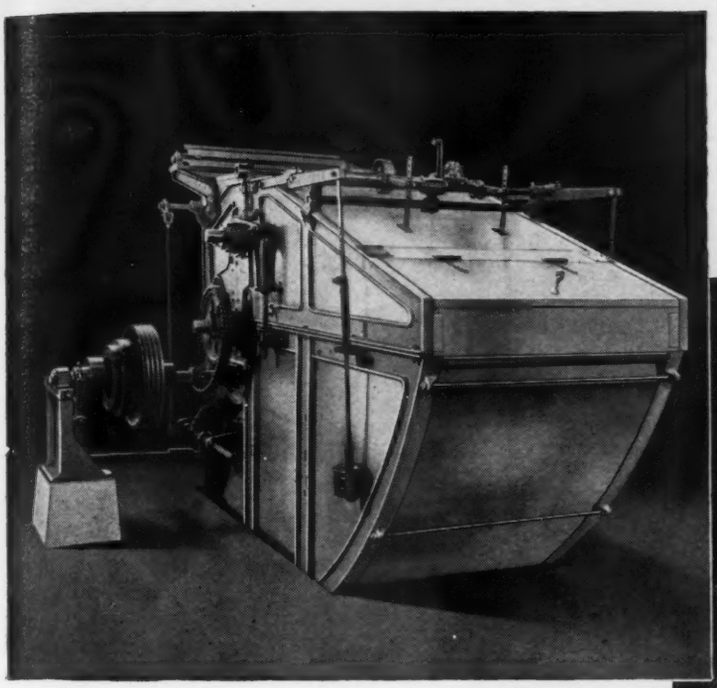
Stone or concrete floors do not satisfy in this respect. Wooden floors, without protection against ground humidity and without solid-concrete bases, can not be used successfully either. It is therefore proposed to install the floor in the following way:

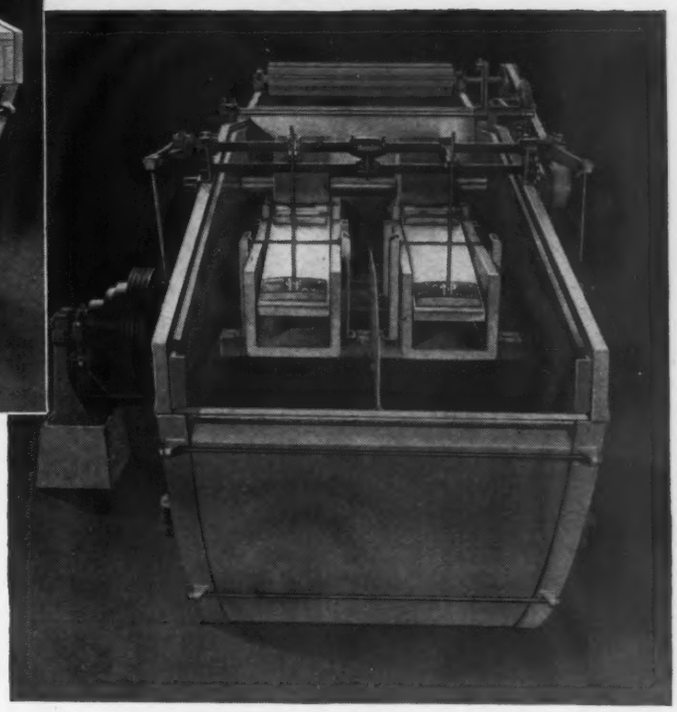
First, pour a layer of 3 to 5 in. of gravel and pound in heavily; then pour on 4 to 5 in. of concrete, subdivided into not-too-large plates, so that a certain amount of expansion can take place. A mixture of 16 to 20 lb. of cement per cubic foot is usually good enough, and the type of ground will determine whether or not steel inserts are necessary for reinforcing the concrete. It is probably preferable to add a few steel rods in order to avoid the settling of sections of the floor (see Fig. 1A). In very humid territory, hollow clay tiles or drain pipes should be placed under the concrete to drain the ground of excess water, as illustrated in Fig. 1B.

The concrete must be allowed to dry completely, which usually requires three weeks in summer. A thin layer of tar paper is spread on the concrete and the overlapping joints are carefully glued together with pitch. The concrete surface must be sufficiently smooth so that the paper is not broken.

JOIST SPACING. Impregnated joists, 2x1 in. are placed on the floor, spaced 5 to 12 in. apart, depending on the size of the boards which are to form the floor. The spaces are carefully filled with a very dry sand which is pounded between the joists. It is often more convenient to space the joists up to 25 in., and to use a soft ½- or ⅝-in. soft-wood underfloor, which should be treated. A layer of tar paper beneath the underfloor improves the construction, but is necessary only in very humid territory. A layer of tar paper is applied on top of the underfloor. About ½ in. of hot asphalt is poured on the tar paper and the parquets are pressed and nailed to the hot asphalt, which closes all cracks from underneath. If any asphalt pours through the cracks it must be carefully wiped off so that the floor is clean. The asphalt must be of such consistency that it will remain hard at any summer temperature. The surface is sanded and polished with light oil polish.

The best surface is formed by dry, impregnated-oak parquets. A possible second choice is ash or beech parquets. Rock maple or hard pine may be considered as third choice. The parquet boards should be joined by tongue and groove. Board sizes should be 2½ to 3 in. wide and 8 to 12 in.





FOR FULLING "WHITES"
Specify
THIS NEW HUNTER ALL STAINLESS MILL

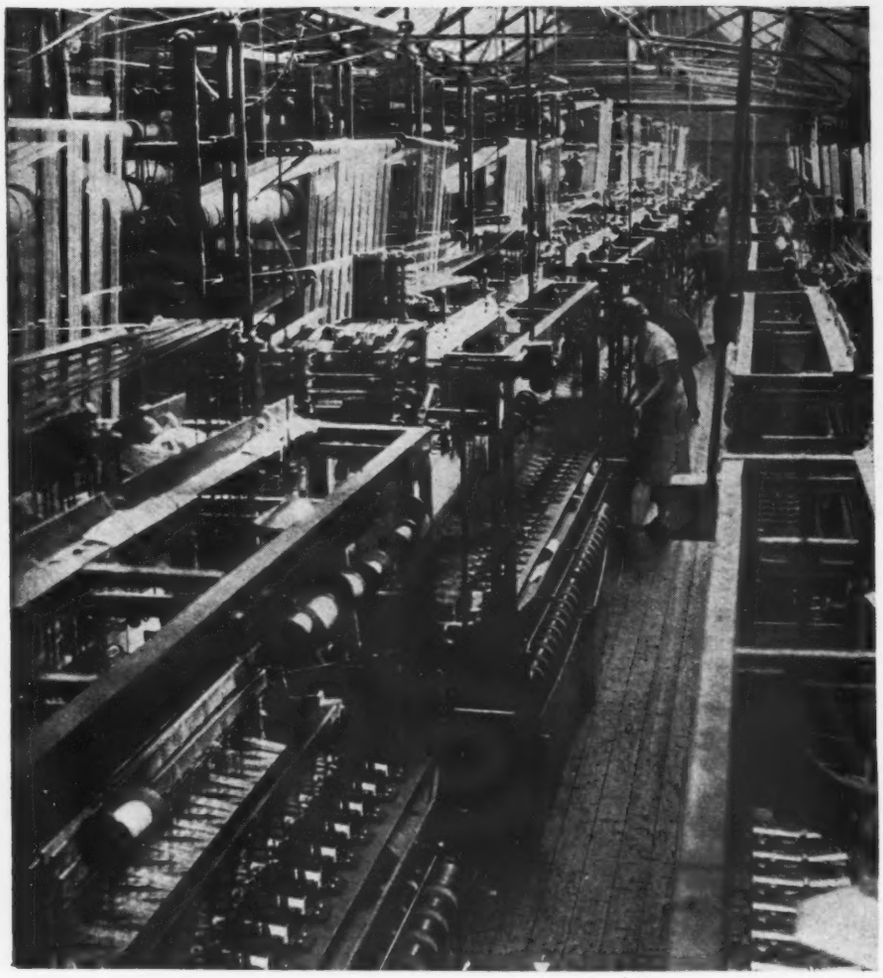
Pictured on this page are two views of the Hunter #21 Stainless Steel Fulling Mill. Designed for the milling of "whites" exclusively, this modern machine offers you these outstanding mechanical and commercial advantages:

1. Entire body of mill as well as doors fabricated from heavy gauge stainless steel. Top may be wood or stainless.
2. Sectional rubber rolls with stainless steel shafts.
3. Stainless steel crimping boxes and stop motions.
4. Stainless steel soap boxes and unloading reel.
5. V-belt motor drives, pneumatic top roll tension, roller bearings, Alemite Zerk lubrication, etc.

We cordially invite you to write us for more complete details on this newly designed Fulling Mill as well as for the names of users and their experiences with this new unit.

JAMES HUNTER MACHINE CO.
NORTH ADAMS, MASSACHUSETTS, U.S.A.
FOUNDED 1847

CLUTSOM HIGH SPEED SHUTTLELESS LOOMS



A Battery of Clutsom High Speed Shuttleless looms

SELLERS MARKETS WILL NOT LAST FOREVER

The Clutsom High Speed Shuttleless Loom has higher production at less cost than any other narrow fabric loom in existence.

Comparative figures prove that Clutsom High Speed Shuttleless looms produce over three times the output of Shuttle Looms for the same payroll. No quill winding—no down time for replacement of Shuttles—continuous filler feed-high speed production — All these and other factors contribute to the amazing result given above.

All mills are faced with rising costs of production—let us show you how you can lower yours.

Clutsom machines will weave a variety of elastic webbing, tapes and ribbons in widths up to 2½". We are now accepting a limited number of orders for prompt delivery.

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Telephone MUrray Hill 4-2327 **FACTORY: Springdale, Connecticut**

long; longer boards, 1 to 3 yd. in length, are often used, but cannot compare with the shorter lengths. Cracks at the ends can be avoided by using short boards. Laying the floors 45° to the axis of the passageways is advantageous.

A simpler and cheaper method is to put the wooden joists directly into the concrete (Fig. 2), so that only one layer of tar paper is required and also the layer of dry sand is saved. However, in this case, the asphalt must be ½ in. to ¾ in. thick. By omitting the dry sand, the floor becomes somewhat less elastic and slightly less "foot-warm."

All machines, especially the looms and preparatory machines, are glued on this floor by using small pieces of felt as an intermediate layer. The looms can be thus removed easily if the shed should be used for other purposes, and no screw holes will mar the floor. Such an oak-asphalt floor surface is crackless. It is "foot-warm" and will require no repair for ten years or more.

It is necessary, however, that all casters and truck wheels used on this floor are provided with the best rubber tires. In this way, the floor is always protected. The slight oil film absorbs the dust in the room and provides a clean, shiny surface. It is further necessary to protect the floor by placing metal trays at those places where oil drips. A large amount of oil which soaks the floor destroys the hard wood quickly.

If these precautions are heeded, an excellent floor is obtained which satisfies the demands for a perfect flooring for all dry-processing departments.

WET-PROCESSING FLOOR. Two types of floors have successfully been used for wet-processing departments: a cement floor with special surface and a glazed-tile floor. The glazed-tile floor is usually cleaner, harder, and needs less repairs; but its main disadvantage is that it becomes very slippery when wet. Even grooved tiles do not help in this respect too much.

The cement floor with a special surface is not so good, but is much less slippery. The surface can be made very hard by high-percentage mixtures of hard-steel powders (which have to be rust resisting). Mixtures of carborundum and some lava stones also provide very hard surfaces. Grooves are not required, because the surface is rough enough so that the danger of slipperiness is avoided. Wooden-lattice platforms are sometimes used in dyehouses, but they make it difficult to keep the floor clean. A solid-concrete underfloor is of great importance. Seldom used, but excellent, is a floor of asphalt tiles, the cracks of which are

KNITTING IS A $700,000,000 INDUSTRY

The knit goods end of the textile industry, according to the last Government census, was larger by about 30% than the volume of the automotive tire industry. The manufactured value of knit goods produced during prewar 1939 was over $680,000,000.

In addition to its importance in the underwear and hosiery fields, knit goods also reaches into many other operations of the textile industry. Knit fabrics are equally at home in a fashionable evening gown or in sports and daytime dresses of great serviceability. They are important fabrics for blouses, negligees, robes, pajamas.

The synthetic yarns pioneered by Celanese play an important role in the knit goods industry. Celanese* yarn goes into men's hosiery and many types of knitted outerwear ranging from bathing suits to sweaters. For the apparel and underwear industries, Celanese produces a wide range of knit fabrics which manufacturers make up into finished garments. Basic qualities and uniform excellence, through control of every step in production from manufacture of yarn and warping, to knitting, dyeing and finishing of fabrics, have brought Celanese to the position of largest producer of warpknit jersey in the United States.

Jersey fabrics of Celanese synthetic yarns share the distinctive advantages which are inherent in these man-made fibres. For example, Celanese Jersey washes easily; dries quickly—for Celanese fibres have exceptionally low moisture absorption. Celanese Jersey is remarkably resistant to wrinkling—a jersey dress can be packed in a bag and merely shaken out at the end of a trip, or hung up overnight. It requires little if any pressing.

Celanese Corporation, with continuous research in the three related fields of textiles, plastics and chemicals, is a major source of supply and of constant product improvement for the textile and many other important industries in which modern synthetics play such a large part. Celanese Corporation of America, 180 Madison Avenue, New York 16, N. Y.

*Reg. U. S. Pat. Off.

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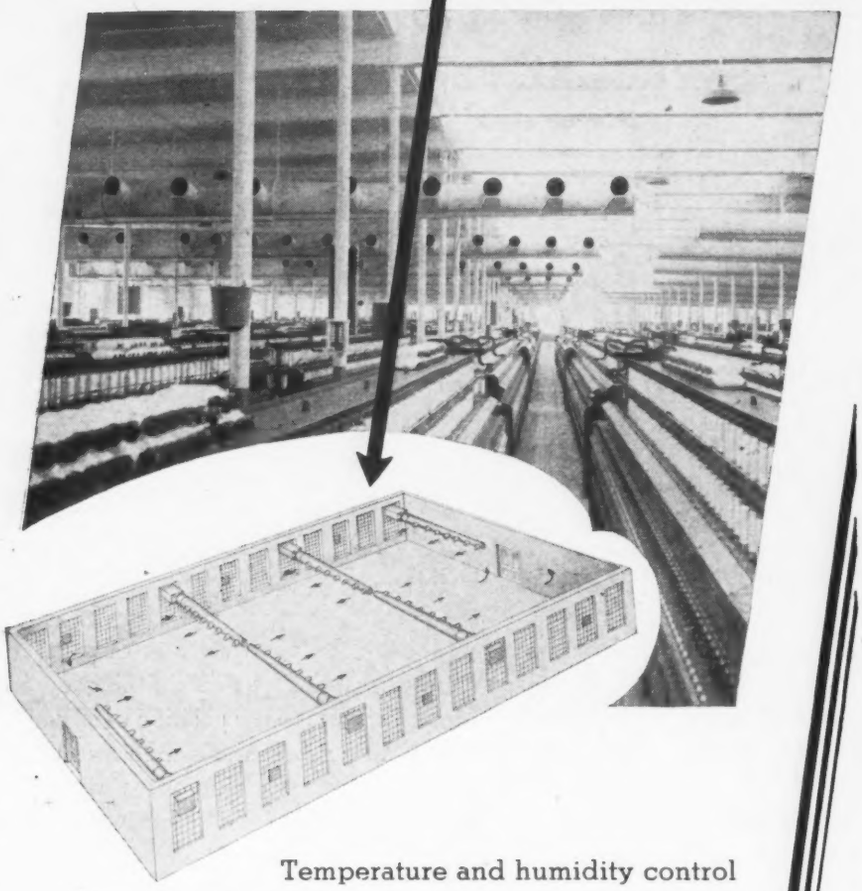
Celanese*

TEXTILES...PLASTICS...CHEMICALS

Bahnson Conditioned Air

WITH POSITIVE CIRCULATION



Temperature and humidity control is dependent upon effective distribution of properly conditioned air. With "Positive Circulation" the Bahnson Humiduct provides directional flow of conditioned air to obtain even distribution and a uniform room condition at working levels. The Humiduct is combined with refrigeration, air filters, and heating for a complete air conditioning system that is flexible, economical, and dependable.

Bahnson System
AIR CONDITIONING ENGINEERS
THE BAHNSON CO. WINSTON-SALEM, N. C.

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filled with white rubber cement. This is one of the best floors for dyehouses. It is "foot-warm," and water and acid resisting. The only disadvantage is its dark color, which is somewhat reduced by using white rubber cement for the cracks. The size of the tiles should be 6 to 8 in. square. The surface is smooth but still rough enough so that it is not slippery.

Plain and Reverse Plating

(*Continued from page 147*)

duced by this method. When it is used with broad-rib knitting, small check patterns may be produced. This is known as "cross-plating" and is illustrated in the pattern draft—shown in Fig. 6. In this case, the yarn position is changed at every sixth course.

PURL KNITTING. As the plated loop consists of two yarns, one at the front and one at the back, it will be seen that plated purl knitting can give reverse plating effects. When a loop is plain, the face yarn shows to the front; but when it is purled, it faces the opposite way; and thus the back yarn shows on the face of the fabric. Interesting designs may be built up in this manner as the reverse-plating color-effect accentuates and deepen the purl design.

EMBROIDERY PLATING. In filling-knitting, the term "embroidery" refers to warp threads superimposed on the fabric and knitted vertically. Extensive designs can be built up in this manner. In knitted footwear, embroidery plating may be combined with reverse plating.

British Knitting Report

(*Continued from page 137*)

section of the industry, no less than to the knit underwear and outerwear sections—was the limited progress made in installing air-conditioning and humidifying systems. The modern British plant is apparently far ahead of anything in the U. S. in this respect.

As for the underwear section of the industry, the delegation seemed to find an absence of the efficiency met with in the hosiery section. The plants, besides lacking air conditioning, were unsuited for efficient production and devoid of the characteristics that usually distinguish American production techniques, its report states. The machines used are antiquated, and the fabric turned out distinctly inferior to that turned out in Britain. The delegation even commented on the "slow

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lifts" (elevators) which serviced the buildings in which the plants were located.

SEVEREST CRITICISM. The severest strictures of the delegation are, however, reserved for the outerwear industry, in which hardly one redeeming feature was reported. Buildings and layouts of the mills visited "left much to be desired . . . and were distinctly inferior to those in England." Even the lighting conditions were not up to modern standards, and there seemed to have been little thought spent on interior color schemes embodying the latest discoveries in the contribution of proper colors both to the working efficiency and the health welfare of the operative.

As for the machines used, "there was little evidence of up-to-date machinery." Production was inefficient, not only due to this but also to lack of labor-saving devices "either by conveyors, chutes, or other mechanical devices," and also because "no effort was made by management to check excessive waste in all make-up operations."

According to the Britishers, the American domestic market will accept the type and quality of goods produced "only until it is offered garments of better make and quality." There is no spirit of defeatism here as there was in evaluating the chances of competing with American full-fashioned hosiery manufacturers. Indeed the British are bold enough to think they can even play in the American outerwear manufacturer's own domestic backyard.

This is the challenge the delegation hurls at them: "In this field, the British manufacturer might well conduct a searching inquiry into the needs of the American as a fruitful field for the development of a lasting export trade."

USE OF LABOR. Previous British delegations had remarked on the efficient utilization of labor in the cotton-textile and rayon-spinning divisions, and the willingness of operatives to cooperate with management in the assessment of scientific work-loads. There is apparently no such condition in the hosiery and knitwear sections. Indeed, comments about the outerwear industry might well have been taken out of the Platt report about similar conditions in England's own inefficient cotton-textile mills.

"In our examination of this section of the industry," says the British hosiery delegation's report, "we found what appeared to us an astonishing attitude in relation to the policy of payment or remuneration to the parties employed . . . The union is utterly

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opposed to the application of piece work on certain vital operations . . . We could only conclude from our examination of the relationships between the union and employers that the balance of power had shifted for the time being to the unions, who were . . . demanding for their members from the industry a full share in the profit accruing from the sale of the goods their members were producing."

It is only fair to mention that the British delegation made the reservation that their comments whether on production, management, or labor relationships were based only on observations in the plants visited, which, while representative, did not cover the whole country. But it is apparent that, except in the full-fashioned branch, the hosiery and knitwear delegation, unlike its predecessor British textile delegations, found little that was good.

Linen-Type Rayon

(*Continued from page 143*)

The frame can be driven by an individual electric motor, or from line shafting. It is made in pitches from 3½-in upward, with a reach adjustment of 4½ to 18 in. Frames of 3½- and 4-in. pitch are appropriate to the range of yarn counts normally used for the manufacture of linen-type rayon fabrics. A special yarn-building device may be fitted for the production of large-size packages from which the yarn can be withdrawn over end for supplying high-speed winding machines.

MINIMUM TWIST. The roving twist is related to the length of staple in use and the weight of roving being made. This should be maintained at the minimum which will allow the material to be withdrawn from the bobbin in the spinning frame without undue breakage. Excess roving twist reduces the roving-frame output and results in uneven drafting on the spinning frame. If the roller pressure is low or the roller surfaces slightly worn, the roving may even run through without being drawn, or snarls may be produced in the yarn. From 0.75 to 1.0 t.p.i. will usually be ample in roving made from 4- to 6-in. rayon staple.

The appropriate spinning draft will depend on the fiber staple in use and yarn quality required. In the interest of economic production, this draft must be maintained as high as possible; otherwise, preparing costs will be increased unduly. On this question, a balance must be struck and maintained between preparing cost, spinning-frame output, and yarn quality. However, the last two factors decline with increasing draft.

For the production of high-class

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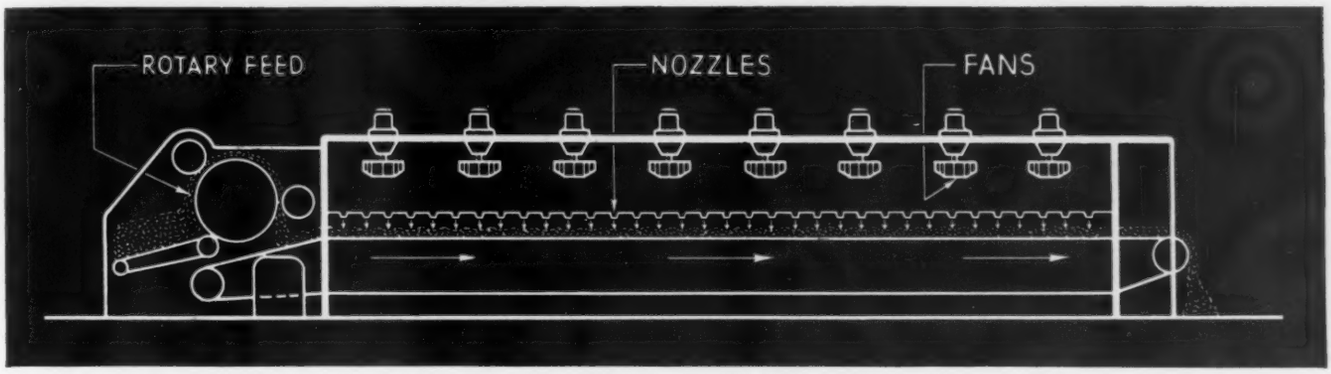
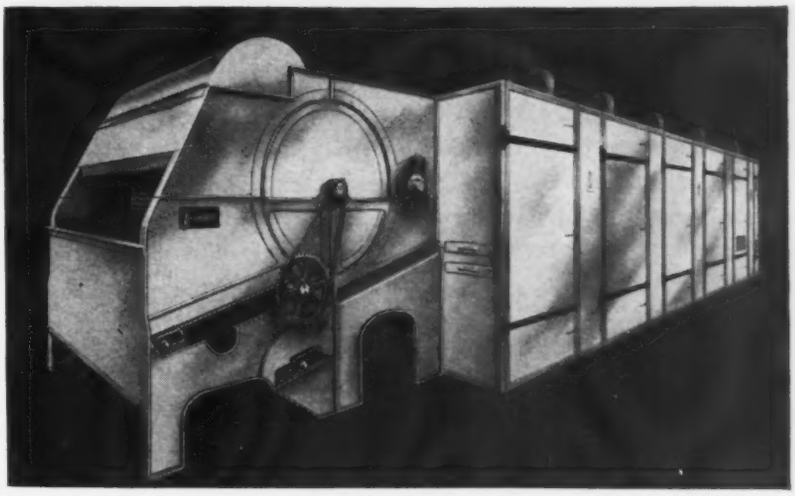


The patented features of design that make possible the "breathing action" of Proctor impact drying, assure you the best possible results when it comes to drying cotton or wool stock or other fibrous materials. Stock dried in the Proctor impact type dryer is carried through the drying chambers on either a woven wire or perforated metal plate continuous conveyor. Heated air, at high velocity, is intermittently impinged against the bed of stock on the conveyor as it moves through the dryer. As the material is subjected to the impingement of air, it compresses and as it passes between one jet of air and the next, it expands, in a breathing-like action, as can be seen from the longitudinal view above. This movement—or "breathing action"—permits heated air to circulate all the way through the bed of material and promotes the uniform, thorough and rapid drying possible with this Proctor impact system. The temperatures within the dryer, as well as the velocity of the air circulation to which the stock is subjected, can be varied to suit the particular requirements of the material being dried. Considered from every angle, impact drying, with its "breathing action", is the ideal method for the correct drying of fibrous materials. If stock drying is a part of your plant operation, write today, telling us as much about your problem as possible. Our engineers will gladly show you how the Proctor impact dryer can fit into your production line.



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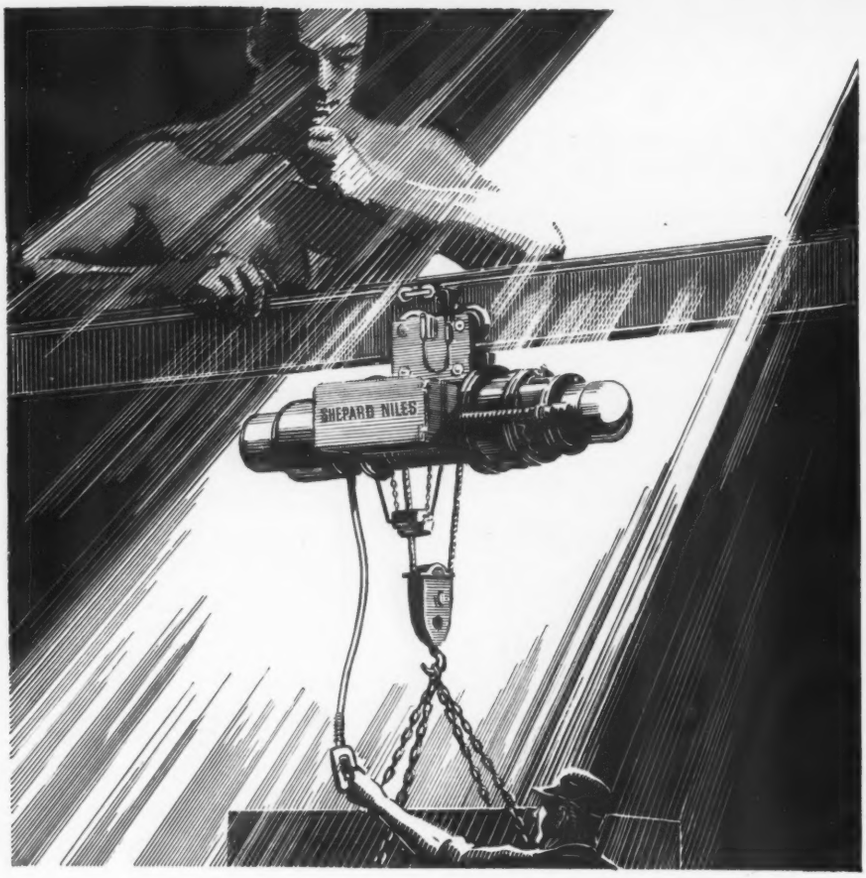

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warp from 4-in. staple, the spinning draft may be as low as 6.0. This would be increased to 8.0, or even higher, when spinning low-grade numbers from longer-staple material. When the spinning draft has been decided, the required roving weight, stated in yards per ounce, may be calculated from the formula—

$$\frac{\text{Yarn Count} \times K}{\text{Spinning Draft}} = \text{Yards per Ounce Roving.}$$

The value of K is 20 for yarn counts up to and including 20 lea. When calculating for finer numbers, the value of K should be taken as 19.

FIBER CONTROL. Maximum fiber control during drafting on frames of the type illustrated in Fig. 1 is insured by adjusting the angle, and consequently the bearing on the material as it is being drafted, of a breast plate and conductor which are mounted between the retaining and delivery rollers. The setting of these in relation to the roving, as it passes from the retaining to the drawing rollers, is intended to retain or open out the roving twist according to the requirements of the material and the yarn.

When spinning long-staple material, only a light binding of the fibers is necessary; and to effect this, the breast plate is set so that the roving will bear lightly on the upper part only. The conductor is set to allow the twist to run out and the fibers to draw freely. When spinning short-staple fiber, particularly for the production of fine counts, it is desirable to keep the roving twist in until the material has approached close to the nip of the drawing roller. To effect this, the breast plate should be set so that the roving bears firmly against it, the conductor being adjusted to obtain a light bearing which will ease the strain on the material right into the nip of the drawing roller. The general principle to be borne in mind when making these settings is that the bearing should vary inversely with the fiber staple; long fiber, light bearing, and vice versa.

The amount of spinning twist to be inserted is determined by the requirements of the fabric. Yarns with low twist give a full handle to the cloth. By increasing the twist, a firmer fabric is obtained, although at some sacrifice to yarn strength. For the manufacture of linen-type dress goods, a yarn twist factor of 1.7 or 1.8 is usually employed. This, when multipled by the square root of the lea, gives the turns per inch; e.g., $1.8 \times \sqrt{25} = 9.0$ t.p.i. for a 25-lea yarn.

SLIP-DRAFT. Recent developments in the application of slip-draft control in the spinning of long-staple fibers,

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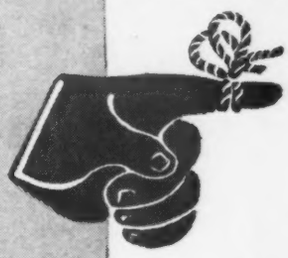

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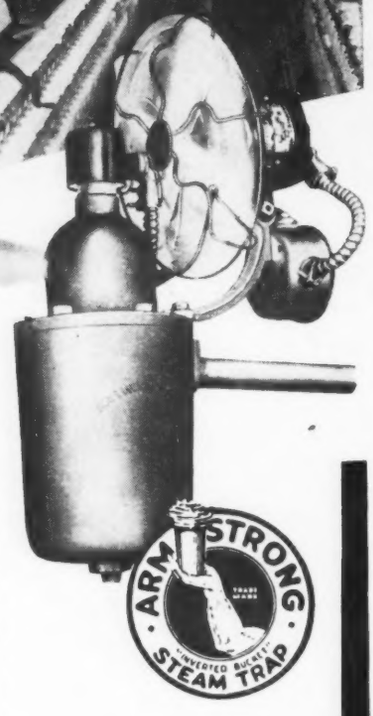

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ARMSTRONG
Industrial Type
HUMIDIFIERS

together with the introduction of means for spinning direct from the finishing-drawing-frame sliver (thereby eliminating the roving process) are likely to find future application in the design of flyer frames for the manufacture of linen-type rayon yarns, as they have already been applied successfully to the spinning of jute and linen numbers.

Various forms of slip-draft mechanism may be employed, including plain, grooved, and fluted rollers with or without aprons. The function of these rollers is to control or restrain the movement of the fibers, which are not gripped by retaining or drawing rollers, to ensure uniform drafting. This permits the use of long spinning-frame drafts, which compensate for elimination of the roving process.

An improved form of double-sided, sliver-spinning frame has now been patented by Fairbairn Lawson Combe Barbour, Ltd., which reduces the floor space occupied by a given number of spindles. On this frame, the cans of sliver are carried on stands situated above and behind the drafting mechanism. A wooden platform is provided along the center of the machine, so that the operative may pass above and behind the spindles on both sides to tend the sliver supply.

FLAX FRAMES. The standard type of flax and hemp wet-spinning frame is also readily adaptable for spinning long-staple-fiber yarns, and it is used in many mills for this purpose. The roving passes over the trough lip, or a guide set above it, to the traverse motion and so to the retaining rollers.

When the maximum reach obtainable on the frame is less than the length of staple to be spun, longer roller stands must be fitted to obtain the required extension, or other means employed for increasing the effective roving path between the nips of the retaining and drawing rollers, to prevent fiber breakage in drafting.

Fig. 2 illustrates a single attachment for the roller saddle of wet-spinning frames, which has been patented, to permit the spinning of fibers longer than the maximum frame reach. It consists of a guide bar A, comprising a metal tube of round cross-section which is set horizontally on the saddle-arch *B*, and projects at either side. An annular recess, or groove, is cut on each projecting arm in alignment with the corresponding rollers to form a guide for the roving, which is passed round the arm shown. The tube is held in position by a screw *C* which passes through a slot in the saddle arm and engages a cross-member at the back. This allows the position of the guide bar **A** to be altered to increase

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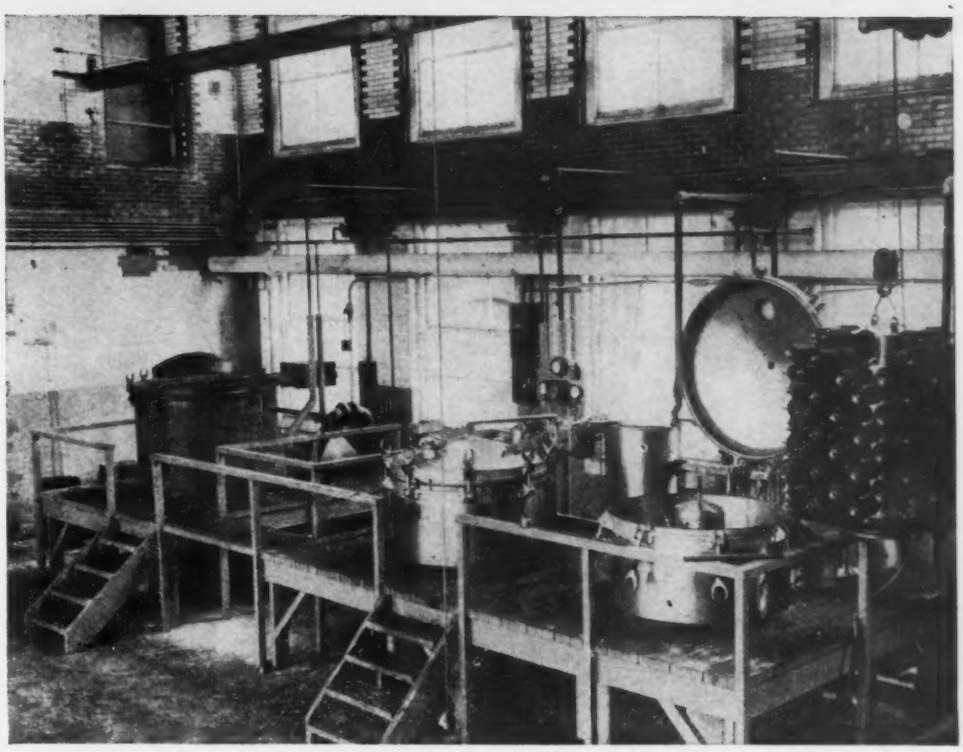

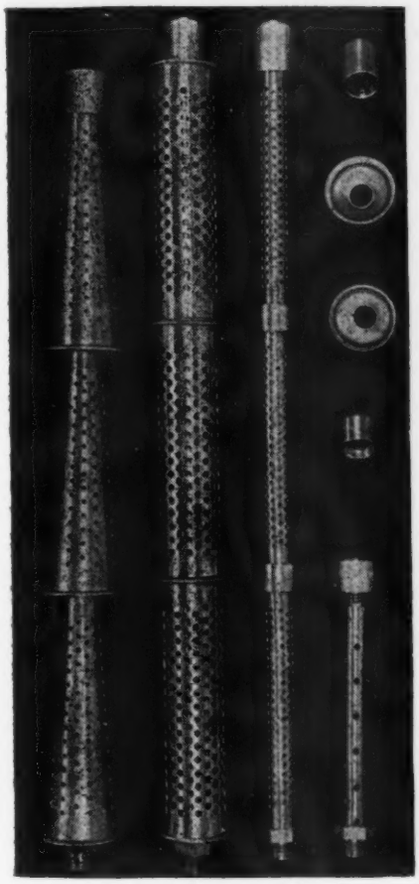

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1. Stainless steel cones and adapters. One to four cones per spindle.
2. Stainless steel perforated tubes, 1-$\frac{5}{8}$" diameter by 6-$\frac{3}{4}$" long. Rigid or spring type with adapters. One to nine per spindle.
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4. Stainless steel perforated spindle. Available in lengths suitable for one up to nine tubes.
5. Stainless steel screw cap.
6. Stainless steel spacer for 1-$\frac{5}{8}$" diam. tubes.
7. Stainless steel spacer for cones.
8. Stainless steel spacer for $\frac{5}{8}$" tubes.

Yarns remain motionless throughout entire operation and therefore do not become creased or matted.

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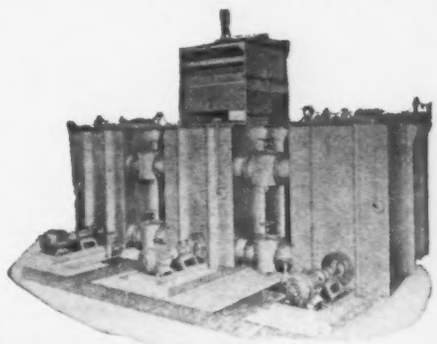
Skein Dyeing Machine
for Worsted Yarns

Each machine is capable of handling 200 lbs. However, 5 machines installed in series by means of connecting valves provide sufficient capacity for dyeing, in a single operation, up to 1000 lbs. of skeined material, all in one color, or five separate 200 lb. lots each in a different color, or any desired combination of colors.

With these machines, even the most difficult shades, including chrome colors, can be obtained with absolute uniformity. They are used also for bleaching and discolouring, with highly satisfactory results.



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or decrease the roving path between the roller nips *D* and *E*.

A process for the production of linen-like, staple-fiber yarns on flax and hemp wet-spinning frames from continuous-filament supply is described in British patent No. 542,235. In this process, cellulose-ester filaments that have been stretched and saponified so as to have a relatively high strength (e.g., 6 g. per den.) are subjected to a breaking tension for the production of staple-fiber yarn during their passage between the retaining and drawing rollers, having previously passed through the spinning-frame trough, the water in which may be heated to 90° to 95° C. Wetting facilitates the breaking and drafting and improves quality and uniformity. The addition of soaps, or other salts, of compounds having a long aliphatic chain assists in wetting out. A yarn suitable for manufacture into high-grade handkerchiefs or similar fabrics may be produced in this manner.

N.A.C.M. Meeting

(*Continued from page* 149)

cottons has been accumulated in the U.S.D.A. laboratories. This is, perhaps, the most extensive collection of such data in existence.

"The results of these studies provide basic information from the standpoint of selecting cotton for best results in manufacturing cotton goods:

"*Yarn Strength*—Fiber strength is the most important factor influencing yarn strength, followed in order by fiber-length uniformity, fiber length, fiber fineness, grade, and fiber maturity. The strongest yarns are produced from the longer, stronger, more uniform, and finer fibered cottons of the higher grades. The less mature cottons tend to produce slightly stronger yarns, other conditions being equal.

"*Yarn Appearance*—Fiber-length uniformity is the most important factor contributing to the appearance-grade of carded yarn, followed in order by the grade and staple length of the cotton. The longer cottons tend to produce yarn of lower appearance grades. Other measurable fiber properties have no appreciable effect.

"*Manufacturing Waste* is primarily associated with the grade of raw cotton; the lower the grade, the higher the percentage of waste. Lower percentages are associated with cotton of more uniform fiber length. Other fiber properties have very slight or negligible effect on manufacturing waste.

"*Bleaching and Dyeing*—Fiber maturity and grade, the latter apparently reflecting the extent of fiber deterioration, definitely affect bleaching

SYLVANIA NEWS
TEXTILE EDITION

NOV. *Prepared by* SYLVANIA ELECTRIC PRODUCTS INC., Salem, Mass. 1946

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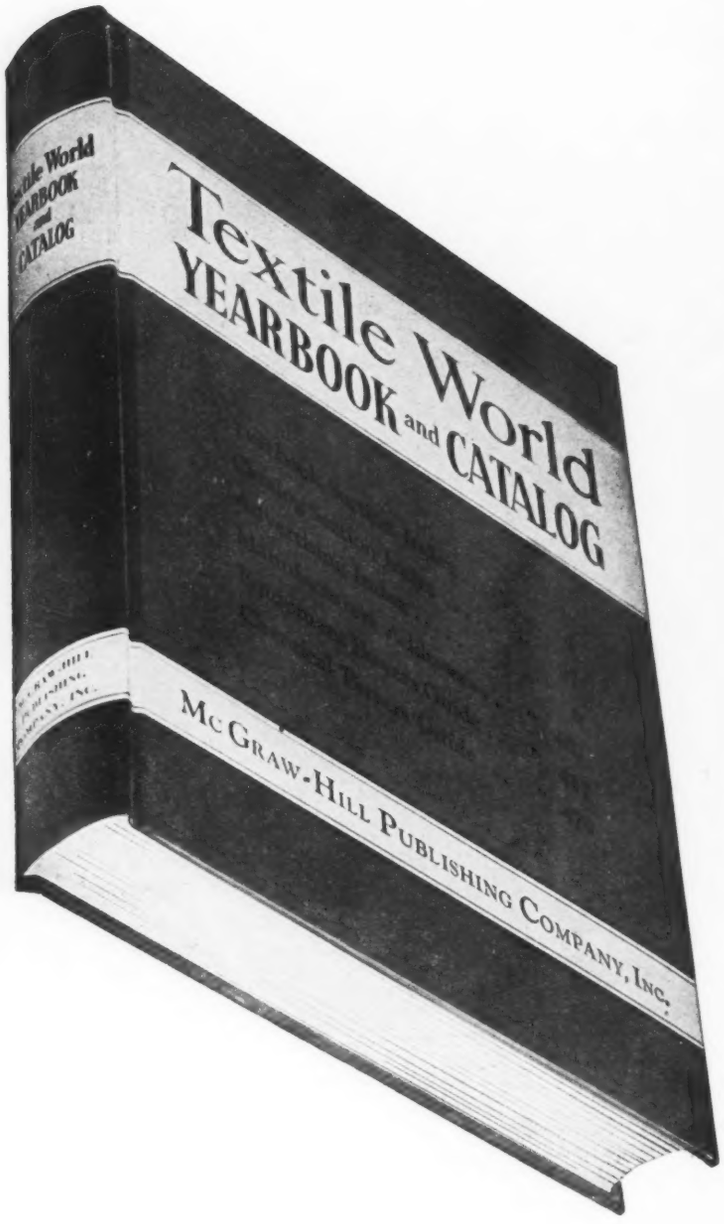


"The Yearbook with the Orange Bands"

and dyeing properties. The higher the fiber maturity and the grade of the cotton, the greater is the dye affinity.

"Based largely on the service of the U.S.D.A. laboratories, the principal cotton breeders are now making remarkable progress in the development of improved varieties and strains of cotton which not only provide high yields but also superior spinning performance. These are having a pronounced effect on certain aspects of quality in the United States crop. In 1928 only about 20% of the crop was 1 in. or longer in staple. More than 70% of the 1945-46 crop was 1 in. or longer in staple. Many of the inferior varieties are rapidly passing out of existence as growers are turning to the improved varieties.

"The newly-developed mechanical sampling equipment is geared into the ginning processes in such manner as to provide automatic sampling of the lint at intervals as it is being blown through the lint-flue to the condenser. This equipment provides a representative cross-section of the content of the entire bale rather than just from the outer layers as is the case with samples cut in the customary manner from the two sides of the bales. The new equipment obviates the need for cutting the bales, thereby preserving the bale package and protecting the bale contents. Two units of the mechanical sampling equipment are now in operation in commercial gins."

CELLULOSE SYNTHETICS. The current situation in rayons was analyzed by H. Wickliffe Rose, assistant to president, American Viscose Corp.

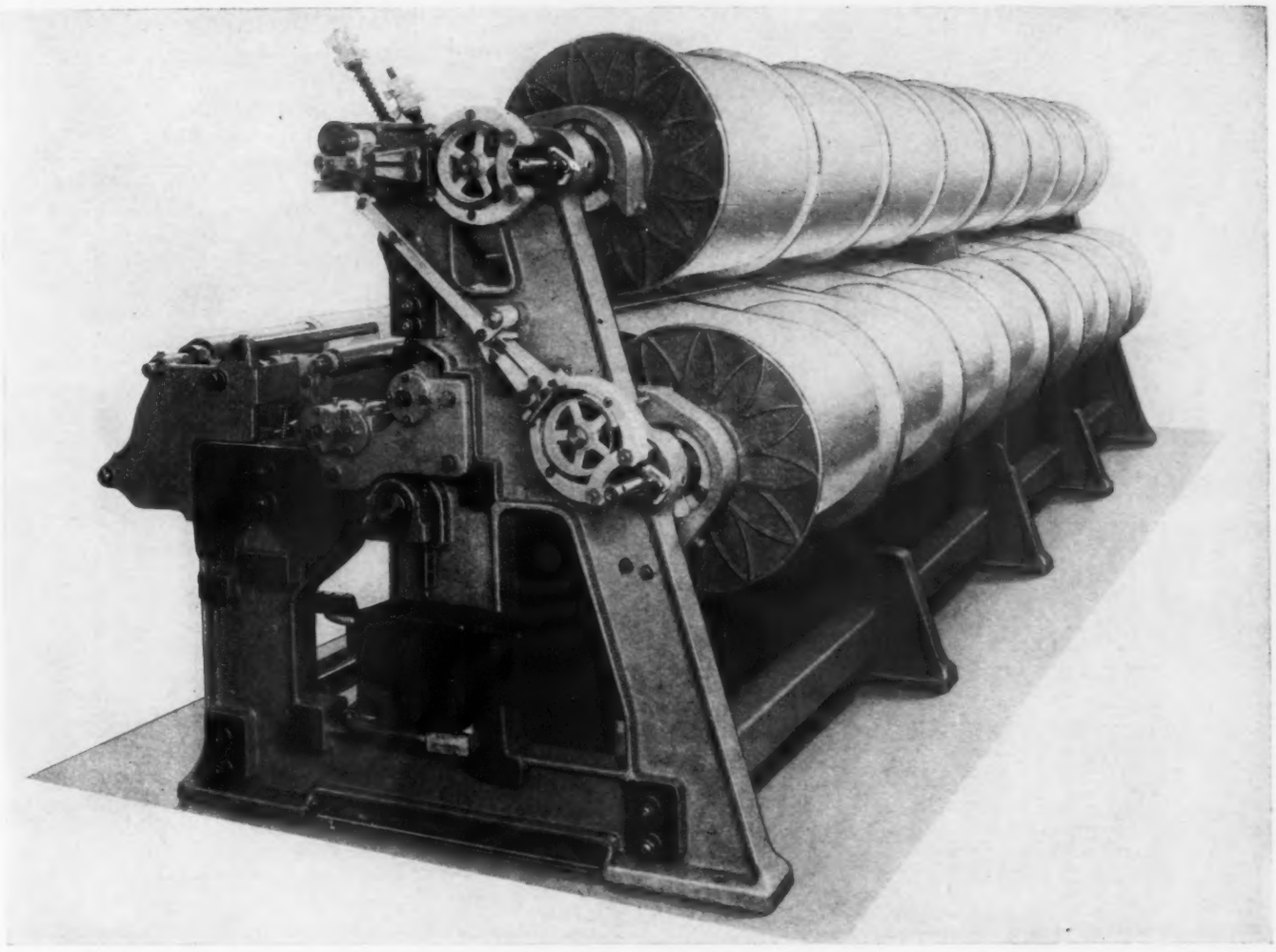
"Rayon producers," he said, "are immediately concerned with technological developments which have any prospect of saving cost. You and the trade are interested in the outcome of such developments, if it means price stability. Rayon staple, for example, was priced at 25¢ in September, 1937, and it is at that price today. Over nine years of a steady price through the rising costs of war, and even further rises since the war, is a record of price stability which definitely is of interest to the mills.

"The producers are next concerned with modified and new rayon products. They are equally interested in a third field of developments, and that is yours—new uses for rayon, new fabrics and materials, new technology and machines for processing rayon, and new markets created by such materials.

"There was a heavy-denier, crimped viscose staple for carpets on the market before the war. Production was interrupted, but we assume that it will take its former place and go on from there. Meanwhile, another type of crimped

THIS New REINER high speed TRICOT MACHINE—Model RT-1

is now in successful operation in leading knitting mills throughout the country



demonstrating its superiority, unexcelled speed, and quality of production.

Speed, economy, safety, and ease of operation have been stressed and welded into a harmonious whole. You may inspect this machine in our showrooms under actual mill conditions, so that you can see, judge, and compare for yourself.

This American-made machine takes 21 inch flange diameter beams also the conventional 13¾ inch flange diameter beams. Knitting width 168 inches or 84 inches—28 gauge (English) or to your specifications. Pattern wheel or chain link drive.

Reiner also offers warping equipment to take up to 24 inch flange diameter beams in all commercial widths. Ask for special folder.

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viscose staple has been developed in this country and is now entering the commercial stage. Such staple is useful in all standard spinning systems for drafting quality, for low twist-factor with corresponding saving in spinning costs, for more loft in yarn and fabric, and for a distinctive character which is desirable, particularly for garments and napped fabrics.

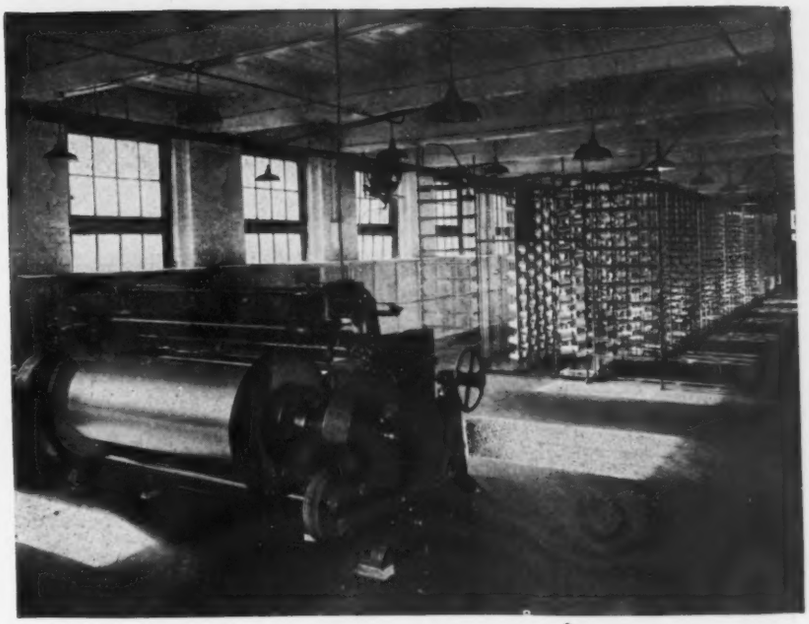
"The advent of 1.0-den. viscose staple in recent years has increased the demand for fine-denier, fine-filament yarns as well. Fashion creators and fabric designers crave rich, versatile, fine yarns and they are going to get them. In cupra rayon, sheers made of such yarns are a hardy perennial. In viscose there have been 150/150, 100/100, and even 60/60 for a brief period. Now they promise to become regular numbers, with other numbers in the one-denier-per-filament type, or even finer. In acetate rayon, development of fine-denier multifilaments is also promising. In this class will fall also such fine-denier, multifilament yarns of rayon which find a place in hosiery, both technically and price-wise competing with nylon and silk.

"During the war, a large capacity had to be converted to tire yarn, and not all of it will be reconverted. This means a loss to garment channels. Post-war uses and possibilities for high-tenacity yarn are important. It should bring economies of less breaks and waste in the mill. It is less inclined to starting marks, bright ends, shiners, and to show results of strain. It enables a fabric to withstand vat dyeing and other rugged finishing processes without damage. It should serve the consumer better under wearing conditions and stand laundering better.

"The strongest of all rayons is a saponified acetate yarn, developed during the war for military purposes. It has a number of possibilities for civilian use, and is one of the most spectacular developments in rayon. Its unique strength and elongation factors place it in a class by itself. The fine-denier, multifilament yarns probably will be of the high-tenacity type.

"Tow-to-top, or tow-to-roving, or tow-to-yarn, all of pre-war origin, are developments which are progressing nicely. They stem from the idea, flashed by many but exploited by few, that a card is not necessary to the spinning of a spun-rayon yarn. There are six systems that could be named off-hand in this country. In Japan I found one of them, the over-draft breaking system, in quite wide commercial use."

NON-CELLULOSIC SYNTHETICS. A survey of the non-cellulosic synthetics was presented by Walter J. Ham-



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HIGH SPEED
RAYON SLASHER

The controls built into this Cocker machine assure higher production and better quality. Here are a few of the many features of this outstanding machine

- ★ Instant Stretch Calculation
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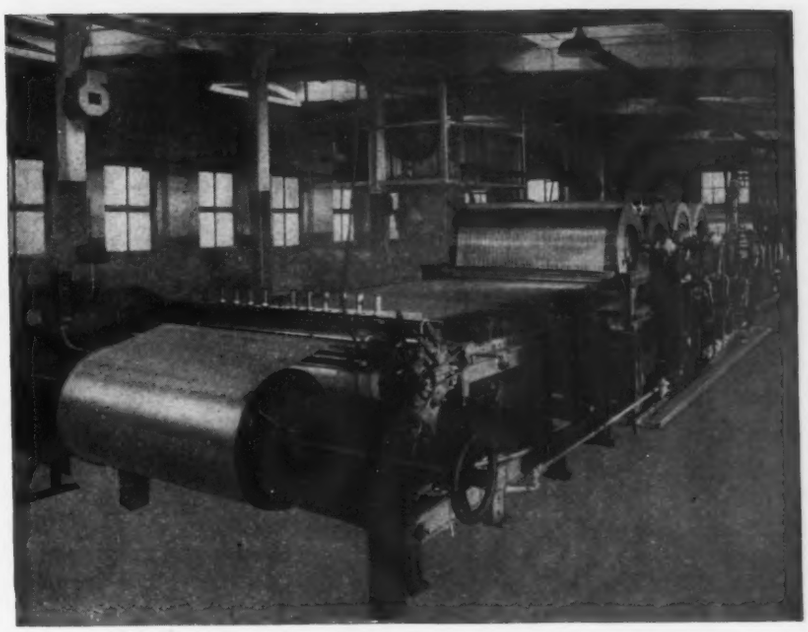
- ★ Graduated Drive, permitting going from high speed to crawl without overrunning, and from crawl to high speed without strain or break on the yarn.



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burger, director, Fabric Research Laboratories, Inc.

"Broadly speaking," he said, "we now have available four major classes of non-cellulosic synthetics which are applicable to the production of textile materials: (1) synthetic proteins; (2) synthetic resins, other than polyamides; (3) polyamides, the nylons; (4) minerals.

"The synthetics offer great possibilities in the field of yarn and fabric development, in that many of their physical properties may be modified to produce fibers having properties particularly suited to specific applications. These modifications are possible by both physical and chemical means, and in many instances may be quite precisely controlled.

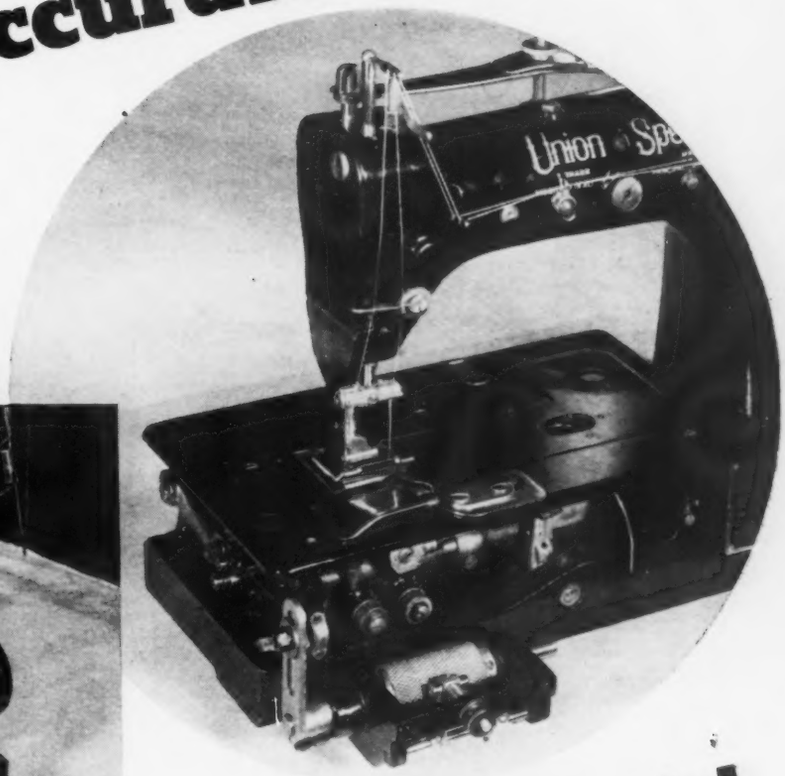
"1. *Synthetic Proteins.* Fibers in this class are, at the present stage of development, inherently weak and highly extensible in their normal state. They suffer an appreciable strength loss in the wet state. They are at present not susceptible to satisfactory modification by physical or chemical treatment, and, hence, are used mainly as diluents in fiber admixtures to impart special effects in handle and appearance. In some cases, the economics of merchandising governs their use.

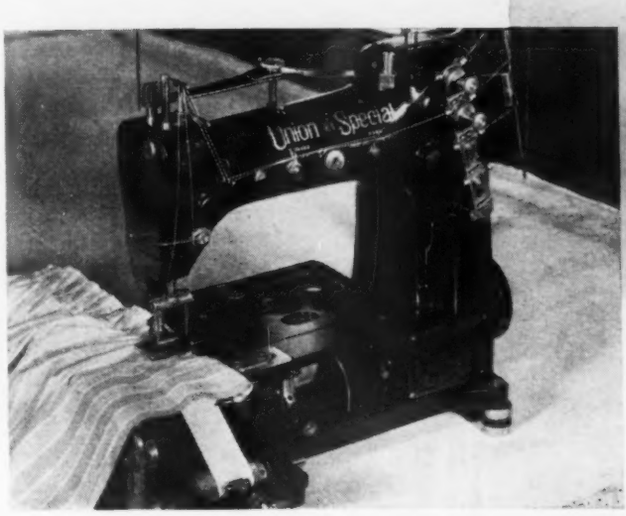
"2. *Synthetic Resins.* These fibers are susceptible to modification, both chemically and physically. Many of their important physical properties may be controlled by some form of after-treatment or controlled during the process of their manufacture. There are in this class fibers manifesting extremes of high strength and low extension, as well as low strength and high extension, in addition to properties of thermoplasticity and resistance to chemical and biological degradation. Saran, for example, already has made a place for itself in the upholstery field. Vinyon staple, due to its thermoplastic properties, is an essential ingredient in certain types of felts.

"3. *Polyamides.* The nylons need no introduction. They represent an extremely interesting class of fibers from many standpoints. Time and temperature of immersion affects various of the physical properties of nylon. Thus, wet finishing can enhance the utilitarian value of the material. If nylon's early processing history is known and accounted for, and properties and results can be successfully predicted.

"4. *Minerals.* Glass is at present the only example in the mineral class of synthetic fibers. Its strength-to-bulk ratio is the highest of all the textile fibers. While its inherent physical properties are not subject to modification in the process of manufacture nor by subsequent treatment, much

for high speed production ... accurate sizes





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elastic metering device

Manufacturers faced with problem of attaching elastic to articles of wearing apparel know that this work can be time-consuming and often results in excessive rejects due to size irregularity. To eliminate these difficulties, Union Special has introduced an elastic metering device which is applicable to several different styles of machines commonly used for banding operations or knitted or woven fabrics. This device controls the amount of elastic applied to the garment and maintains a constantly uniform tension on the elastic. The elastic is guided mechanically, the operator handles only the garment. Reports from users indicate that it is now possible to maintain sizes to within plus or minus ¼ to ½ inch. All of which serves to boost production far above previous levels.

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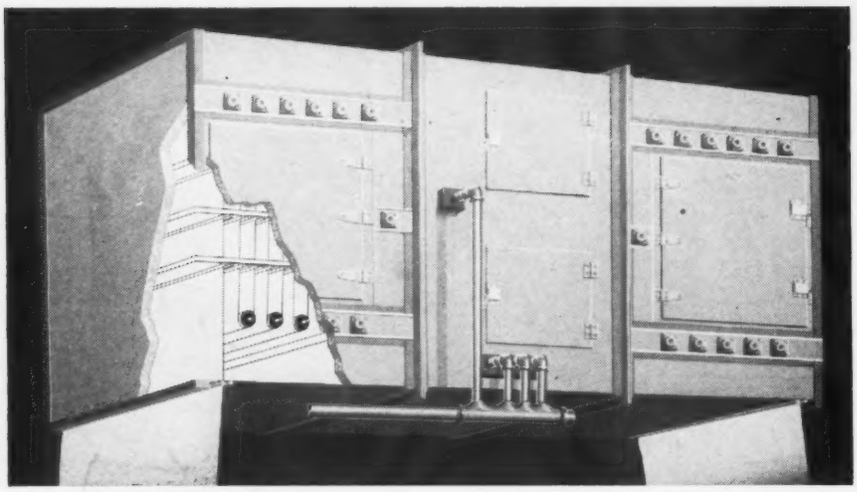

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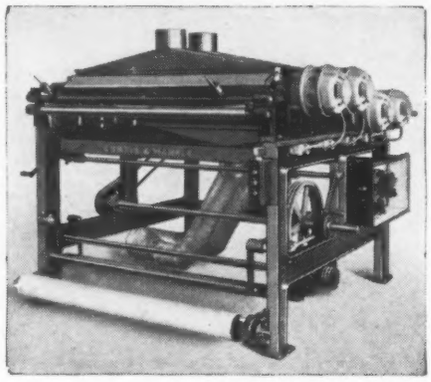

TYPE CMR SHEAR

With Electronic Seam Protector

Our latest type C M R Shear completely removes selvage and surface threads from cottons, rayons and silks, at the highest cloth speed of any machine built. It operates more efficiently, gives better results and greater production. The highly sensitive automatic seam protector, *electronically controlled*, gives complete full-width protection on all seams.

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Curtis & Marble

MACHINE COMPANY

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progress has been made in producing ultra-fine filaments and in applying special chemicals as coatings to render the fibers more efficient for specific end uses. Some of the filaments are of such small diameter that they are visible as individual fibers only with the use of the electron microscope. Fibers designated as 'A' fiber have diameters of 1 micron (1/25,400th of an inch) and newer developments 'AA' and 'AAA' are ½ micron (1/50,800th of an inch) and smaller, respectively. The latter is so fine that actual dimensions have not as yet been precisely determined. Glass fabrics are especially adapted to the production of plastic laminates. No other fiber has yet yielded strength and rigidity in these products comparable to glass. The fibers also lend themselves to thermal insulation, draperies, and industrial fabrics."

FABRIC FINISHING. Problems of fabric finishing were discussed by Richard W. Powell, research director, Bradford Dyeing Association (U.S.A.). He said, "The modern trend in the finishing of woven textile fabrics is directed as never before toward satisfying a rising consumer demand for faster colors and more durable finishes. Eye appeal and hand are just as important as they ever were, but the woman who buys yard goods or wearing apparel is not going to be satisfied with these two attributes alone. She also wants to know—will it wash, will it fade in the sun, will the finish wash out, will it shrink, etc. The publicity given to various new products and processes has resulted in the education of the consumer to demand colors and finishes which at least will last the life of the garment."

After discussing some of the newer methods of producing faster colors and more durable finishes, Mr. Powell said, "I should like to put in a plea for continued and increasing cooperation between the various branches of the industry, the yarn producer, the designer, the weaving mills, finishing plants, and converters. The textile industry of today with its multiplicity of new synthetic fibers and finishes faces enough problems, even with full cooperation on the part of all concerned. Without such cooperation we shall not be able to take full advantage of the possibilities that lie before us.

"Offhand I can think of two important problems which might be solved in this manner. Many of you are aware of the importance of denier, staple-length, and twist in the production of suiting, sportswear, and dress-wear for crease-resistant finishes. Such cloths when properly designed, executed, and finished compare favorably in appear-

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ance and properties with woolens and worsteds. One of the outstanding drawbacks of cotton dress fabrics today is their lack of such crush-resistance. Is it not conceivable that studies similar to those made on rayon might result in vastly superior cotton fabrics?

"Another important problem on which we do not have all the answers is the question of dimensional stabilization and shrinkage control of rayon fabrics. Different constructions vary enormously in what might be termed their relaxation shrinkage, and in their tendency to shrink progressively in successive washings. What are the reasons for these variations? Here again a cooperative study might result in a better end-product."

Mothproofing

(*Continued from page 170*)

group includes both young and older larvae. The author's observations over a period of many years indicate an average fatality of approximately 50% for the first test to which these larvae are exposed. Each exposure decreases the percentage of deaths. Most test procedures, however, advocate the use of new worms for each exposure.

The author has observed mature carpet-beetle larvae crawling over pure paradichlorobenzene crystals in a small drawer after many weeks of exposure. He has also seen larvae eating a mohair pile fabric that has been treated with a great excess of arsenate of lead. Laboratory tests have shown that it requires 48 hours to kill a mature carpet beetle larva when exposed in a sealed glass jar to an excess of paradichlorobenzene crystals.

Common clothes-moth larvae, while causing a tremendous amount of damage each year, are sissies compared to carpet-beetle larvae. The clothes-moth larva is very delicate and comparatively easy to kill. The carpet-beetle larva is similar to a bulldog in many characteristics. He is tough, hard to kill, and has an enormous appetite. He readily survives, without any apparent harm, treatment that would quickly kill the clothes-moth larva. He eats fibers the clothes-moth larva would not touch and does much more damage during his eating process. He is truly the gangster of the textile-destroying insects.

It is almost impossible to eradicate these insects from the home or mill. A temporary job can be accomplished by fumigating with cyanide gas. Reinfestation can occur quickly after the house or mill becomes fit for human occupancy. The beetle can, luckily, be controlled; but control achievement

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HILD Floor Machines are designed for use with the easily interchangeable attachments pictured below to condition and maintain floors of all kinds . . . either in the mill or in office areas. Scrubbing with the Tank-Type Machine and the patented HILD Shower-feed Brush gets floors cleaner with less scrub-soap solution . . . cuts soap costs . . . does not splash water on machinery or furniture. Scrub-soap solution is fed from the tank on the handle of the HILD Floor Machine to the back of the Shower-feed Brush . . . then passes through accurately spaced holes penetrating the brush back between each row of bristles.

HILD Floor Machines speedily scrub open areas in lanes between machines . . . yet are easily guided into hard-to-reach spots under and around machinery. They are sturdily built for long, trouble-free service.

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We all still have them and probably always will. But by talking them over with others, a solution is often discovered. Let us try to help you.

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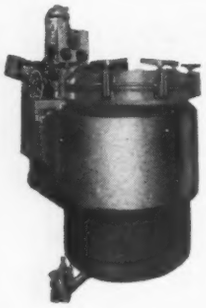
The Fleet Line



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OPERATION SCIENTIFICALLY CONTROLLED with Temperature, Pressure and Depth Indicators

This addition of a panel board with temperature, pressure and depth indicators to the Fleet Line Stock Dye Kettle is a typical example of how Riggs and Lombard is continually improving the design of its equipment.

This improvement in no way lessens the importance of other features, which are as follows:—

1. Will dye wool (noil or coarse carpet stock) as well as cotton and rayon.
2. Main kettle and expansion tank in one unit, eliminating many protruding fittings, and lowering upkeep cost and circulating friction.
3. Tilting or removable cover.
4. Inside of kettle is highly polished stainless steel plate, facilitating unloading.
5. Unloading done by electric or air hoist, which lifts out entire batch on perforated false bottom.
6. Kettle above flooring insulated with rock wool to conserve steam.
7. Pump submerged in dye liquor at all times, eliminating need for packing. Driven by easily accessible vertical motor. Delivers into large duct up through perforated center pipe and over stock. (No agitation of latter).

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For over 80 years the Southern textile industry has looked to Cole for design, fabrication and erection of elevated tanks for sprinkler and general service.

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Our experienced engineering department is at your service to assist in solving your problems. Write for our general catalog—"Tank Talk."

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entails much constant labor. A spray of pyrethrum-derris root extract in petroleum solvent, applied to floor cracks, clothes closets, and storage spaces once a month helps to decrease the destruction caused by these insects. Another good spray mixture is paradichlorobenzene dissolved in a mixture of carbon tetrachloride and ethylene dichloride. The objection to this preparation is its strong, disagreeable odor and its toxicity in confined places.

Scientific research will in time discover and develop the 100% efficient mothproofing compound, which will merit the undying gratitude of mill men and housewives from one end of the earth to the other.

Improved Equipment

(*Continued from page 110*)

whether equipment that has been overworked and patched up can even exist when real competition arrives."

Another knitting mill stated that it budgeted $50,000 annually to depreciation of machinery and reinvests that amount in new equipment each year. This policy, it is stated, keeps the mill as up-to-date as possible.

FINISHERS EXPECT SAVINGS. Dyers and finishers planning installation of new equipment expect most machines to save their initial cost within five years. One finisher who has much new equipment already installed anticipates delivery of a new printing machine and an overfeed pin tenter; he expects to realize a total saving of $8,000 per year and to pay for the installation in five years. Mercerizers will pay their cost in five years, continuous-dyeing ranges in three years, and wide frames in four years, stated another finisher. Continuous-bleaching and dyeing equipment planned for installation in a third mill is expected to save $30,000 per year and to pay its way in five years.

Practically all finishing machinery has been improved both in design and for greater production, stated one replier who went on to say that the progress in development of such equipment is more and more toward high-speed, large-volume units. This, he said, imposes a difficult situation on the small finishers who have neither the money to pay for such expensive installations nor the volume of business to warrant purchasing them. Another report on finishing machinery estimated that use of latest equipment would enable the mill to realize savings of $23,000 a year, based on cost of operating older equipment in use at present; and that the cost of installations would be returned in four years.

Temperature-control equipment for

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but our basic principle is the SAME –

We've changed our name to Industrial Ovens, Inc. to define more clearly the scope of our service to industry. That service consists of the engineering, design and installation of systems and equipment for oven treating and processing operations.

As the Industrial Oven Engineering Company this organization has been responsible for increasing and speeding up production and lowering production costs in a wide range of industries—wire, rubber, textile, plastic, ceramic, metal finishing and many others.

If you have a production problem involving oven treating or processing, *the engineered application of heat in continuous material-handling operations* can help you—and that means Industrial Ovens, Inc. can help you. Write today for literature describing IOI installations in your field.

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DRUMMOND SOAP

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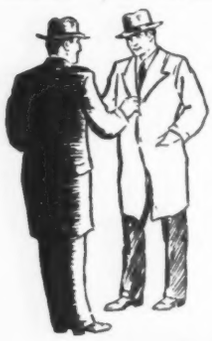
THE SAME FEATURES OF DRUMMOND SOAP—*Plus*

EASY TO USE—SUDS BETTER!



Drummond Flakes are so easy to use! And you couldn't get a flake that suds better! Note these Drummond Soap features: high body with low alkali content . . . leaves fabrics perfectly clean with softer feel, brighter colors, and whiter whites.

Try Drummond Flakes and note the difference in your fabrics. Ask for Drummond Flakes or Solid.

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Standard Soap Co. of Camden

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dyers, costing $30,000 to install, will save $2,000 per year, and pay for itself in 15 years, it was estimated. Other reported and estimated savings through improved control equipment are: temperature controls for J-box bleaching equipment—50% saving on steam used; temperature controls for all types of dryers—savings in steam consumption sufficient to cover initial cost within six months. Temperature controls for automatic washers will save $1.20 per hr., or $2,880 per year, based on 8 hr. per day and 300 working days per year, stated one reply.

GENERAL AND MISCELLANEOUS. One replier was enthusiastic about the reduced costs effected by air-conditioning equipment. He said, "In general, ultra-modern textile mills with complete air conditioning to control temperature as well as humidity are going to make possible greatly increased production [hence savings] through higher spindle speeds. As time goes on, this is going to mean the use of mechanical refrigeration, but the reduction in unit cost will entirely offset the increased capital investment and cost of operating the air-conditioning plant."

Fluorescent lighting reportedly is saving one mill about 40% in power, bulb, fixture, and maintenance costs over previous installations.

Testing apparatus is a different type of equipment on which to calculate savings or reduced costs, stated most manufacturers listing estimates on this equipment. One replier stated: "We have always considered that after ten years all the equipment in a laboratory should be written off and replacement considered. However, we know through personal experience that it is possible to save the price of the entire laboratory within three weeks."—GORDON B. M. WALKER

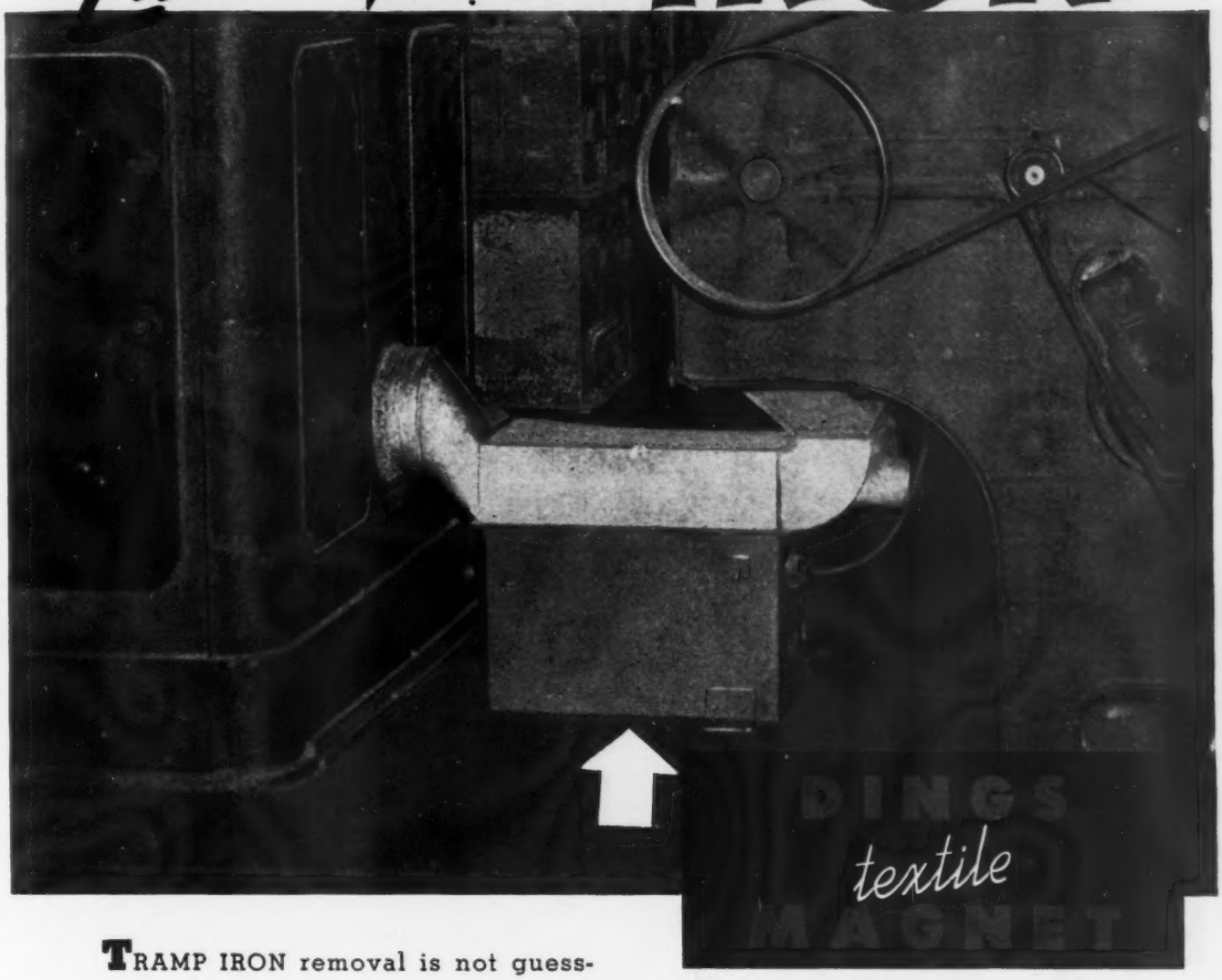
C. T. I. Annual Meeting

(*Continued from page 135*)

First World War, commencing in the late spring of 1920 and lasting through 1921. But it can be serious enough, nevertheless; and if a sufficient number of mistakes are made to prevent the unquestionably favorable factors in the present situation from exerting their influence, it might set us back for a considerable period.

"The percentage of consumer income spent for food and non-durables has been entirely out of line with past expenditure patterns and cannot possibly be maintained for a sustained period. The output of durable goods —both consumer and capital—has been hobbled by work stoppages, ris-

Last stop for TRAMP IRON



TRAMP IRON removal is not guesswork with Dings Textile Magnets. "High Intensity" magnetic strength—with more than 20 times the effective range of non-electric magnets—allows installation of Dings Magnets with no restricted ducts or complicated zig-zags to slow production volume and create the possibility of chokes.

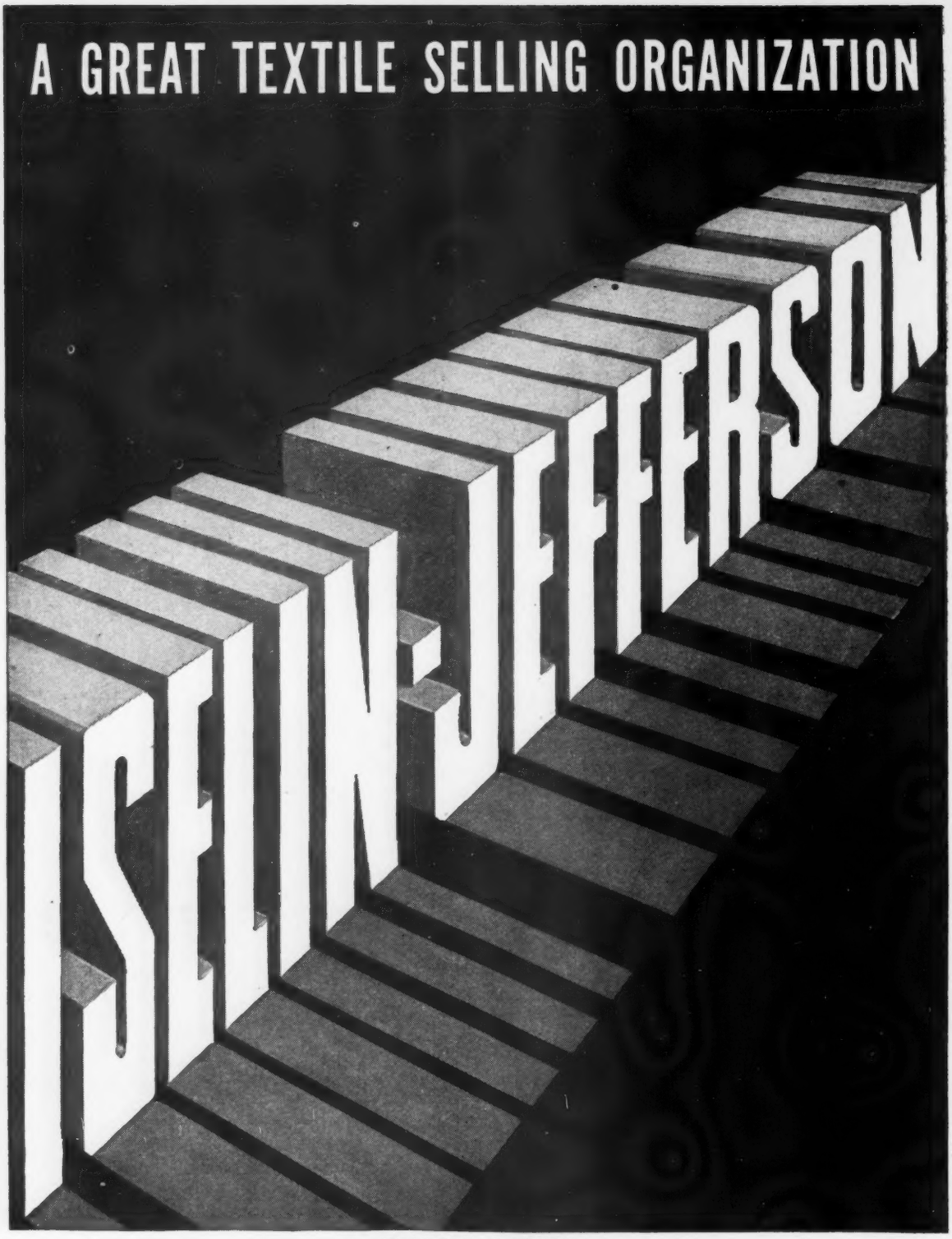
With Dings, *one* magnet does a positive iron removal job . . . Does not lose its magnetic strength after a few months use . . . Has corrugated, non-sparking bronze face plate to help trap non-magnetic as well as magnetic foreign substances.

Write Dings today for full details on positive magnetic protection for your mill.

DINGS MAGNETIC SEPARATOR CO.
540 E. Smith Street • Milwaukee 7, Wisconsin

"Separation Headquarters Since 1899"

Dings
"HIGH INTENSITY"



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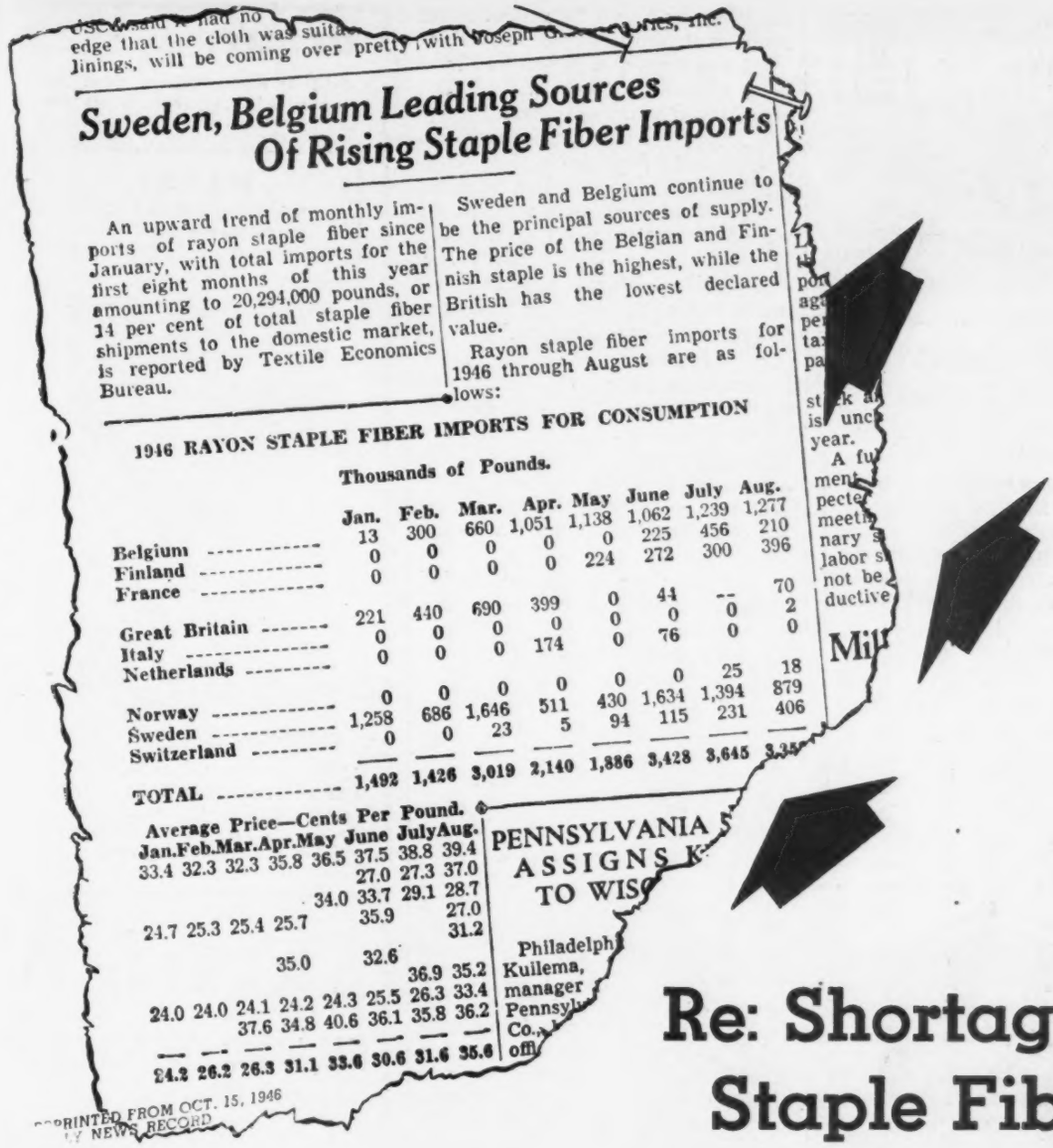


edge that the cloth was suita... Inc.
linings, will be coming over pretty with Joseph ...

Sweden, Belgium Leading Sources Of Rising Staple Fiber Imports

An upward trend of monthly imports of rayon staple fiber since January, with total imports for the first eight months of this year amounting to 20,294,000 pounds, or 14 per cent of total staple fiber shipments to the domestic market, is reported by Textile Economics Bureau.

Sweden and Belgium continue to be the principal sources of supply. The price of the Belgian and Finnish staple is the highest, while the British has the lowest declared value.

Rayon staple fiber imports for 1946 through August are as follows:

1946 RAYON STAPLE FIBER IMPORTS FOR CONSUMPTION

Thousands of Pounds.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
Belgium	13	300	660	1,051	1,138	1,062	1,239	1,277
Finland	0	0	0	0	0	225	456	210
France	0	0	0	0	224	272	300	396
Great Britain	221	440	690	399	0	44	--	70
Italy	0	0	0	0	0	0	0	2
Netherlands	0	0	0	174	0	76	0	0
Norway	0	0	0	0	0	0	25	18
Sweden	1,258	686	1,646	511	430	1,634	1,394	879
Switzerland	0	0	23	5	94	115	231	406
TOTAL	1,492	1,426	3,019	2,140	1,886	3,428	3,645	3,35

Average Price—Cents Per Pound.

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
33.4	32.3	32.3	35.8	36.5	37.5	38.8	39.4
					27.0	27.3	37.0
				34.0	33.7	29.1	28.7
24.7	25.3	25.4	25.7		35.9		27.0
							31.2
				35.0		32.6	
						36.9	35.2
24.0	24.0	24.1	24.2	24.3	25.5	26.3	33.4
				37.6	34.8	40.6	36.1	35.8	36.2
24.2	26.2	26.3	31.1	33.6	30.6	31.6	35.6

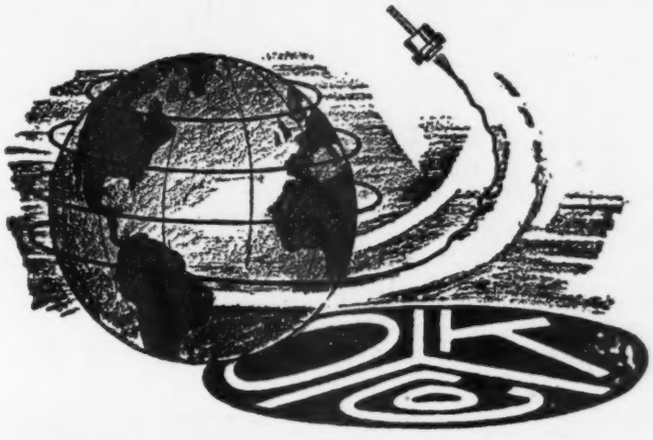
PENNSYLVANIA ... ASSIGNS K... TO WIS...

Philadelph... Kuilema, manager Pennsyl... Co., ... offi...

REPRINTED FROM OCT. 15, 1946 ... NEWS RECORD

Re: Shortage of Staple Fiber

Existing shortage of staple fiber will not be relieved for several years, because the demand of the rapidly increasing markets for spun rayon outdistances plant expansions. Even expansion programs presently scheduled do not indicate an adequate supply of rayon staple fiber for years to come.



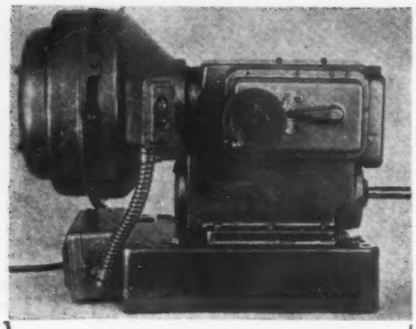
We have installed and operated more rayon and staple fiber plants than any other organization in the World. At the present time we are constructing plants for 40,000,000 lbs. annually.

If your mills consume 200,000 pounds of staple fiber per week or more discuss with us the establishment of your own staple fiber production—it's an economical and practical proposition. Negotiations will be treated in strictest confidence.

OSCAR KOHORN & CO., Ltd.

501 Fifth Avenue

NEW YORK, N. Y.



Model HT2 Hydraulic Transmission

VELVET SMOOTH VARIABLE SPEED

Here is the way you can obtain dependable infinitely variable speed—from zero to full drive-motor speed in either direction. HT2 Hydraulic Transmissions provide constant torque and high efficiency over the entire range — allow rapid changes — eliminate clutches. Available in 2, 3, & 5 hp. sizes, with motors of 1140 or 1725 rpm.

Catalog upon request

PORTMAN MACHINE TOOL COMPANY, Inc.
70 Portman Road, New Rochelle, N. Y.

ing labor costs, and by materials and component shortages, toward all of which inept government controls have importantly contributed. . . . We can, however, support present wage rates, if we can eliminate existing impediments to high production. Ultimately, I am convinced that we must move toward a rational principle of wage determination that links wage advances to increased productivity and thus provides labor with a direct incentive for moving in what everyone agrees to be the necessary direction."

A. W. Zelomek, economist of the International Statistical Bureau, said that during the next 12 to 18 months he was afraid there would be some important and rather unpleasant changes in the cotton-textile economy. However, on the longer-term prospect, he was optimistic and commented as follows:

"For the three- to five-year period beginning in 1948, we believe that following will provide reasonable estimates of textile consumption. Comparisons are with 1939.

"1. Textile fiber consumption, prewar types only, should average about 40% above the 1939 level.

"2. New types of yarn will add another half billion pounds or so to the textile total. Consumption of all types of fibers should average about 50% above the 1939 total.

"3. In 1939, three-fourths of the total was accounted for by King Cotton. During the later period, less than two-thirds of the total will be cotton; the allowance for synthetics of various types must be raised from one-eighth to three-eighths of the total. The war, the stable price of rayon, and the success of the cotton bloc in constantly securing higher prices for the grower, are responsible for this drastic change in the distribution of fiber consumption."

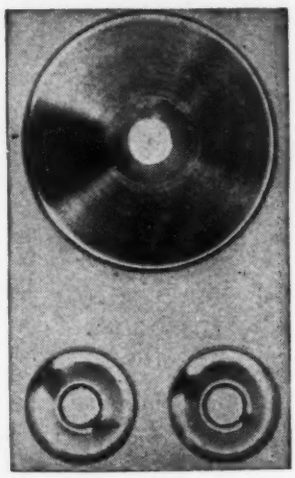
TARIFF SHOULD BE WATCHED. H. Wickliffe Rose, of American Viscose Corp., spoke in his capacity as president of the American Tariff League and urged that attention be paid to tariff matters while they were in the formative stage instead of later when damage had been done. "The tariff under the Trade Agreements Act is rigid," Mr. Rose said. "What is needed is a flexible tariff, with continuous studies of the rapidly changing conditions, a strong Tariff Commission to review them, and changes in rates to meet the conditions from time to time."

Tariff was once on a national level; it is now on an international level, he pointed out, stating that next summer 52 nations will meet to set up international trade. He pointed out that if

REEL CAPS

Hard Chromium-Plated Steel Reel Caps, made in sizes to fit your bobbin heads. *Write for quotation.*

WAYNE MANUFACTURING CO.
Textile Mill Supplies
HONESDALE, PENNSYLVANIA



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FILLING WINDERS

Produce Filling of maximum yardage in Cop, Butt and Bobbin form for plain or automatic looms at minimum operating cost and maintenance.

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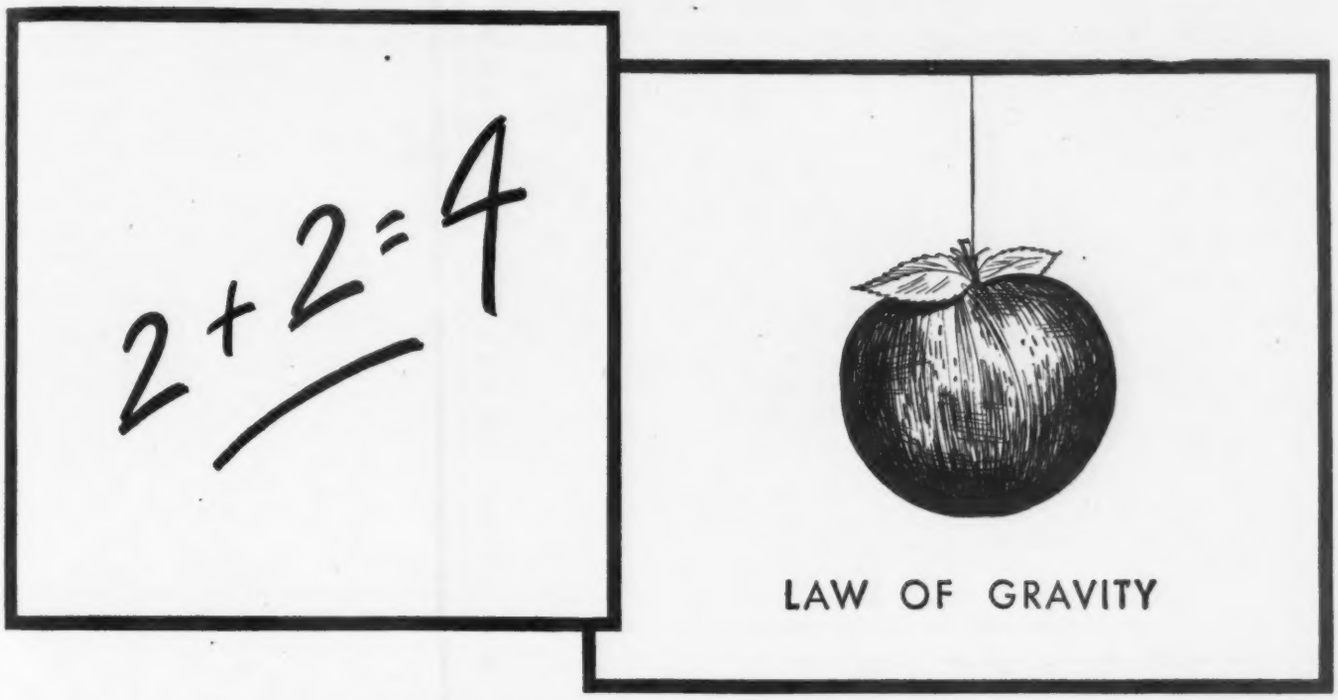

FOR SCOURING AND DYEING WOOL YARNS

SOAPS or synthetic detergents — which gets the call for scouring and dyeing woolen and worsted Yarns?

Either Olate or Orvus will give you the efficient performance so essential in the scouring operation. In dyeing, it's Orvus all the way. Olate-scoured and Orvus-dyed yarn . . . or yarn scoured and dyed with Orvus alone . . . comes out soft, lofty, resilient, clean to the core. Here are their special characteristics—judge for yourself.

Olate

A pure, neutral flaked soap of exceptionally low titer and gentle cleansing action. • Fast dissolving. • Fluid solutions penetrate fibers quickly and thoroughly. • Excellent emulsifying properties. Holds spinning oils and dirt firmly in suspension until flushed away in rinse.

ORVUS *

A time-tested, neutral synthetic detergent. • Assures efficient removal of spinning oils. • Tends to reduce felting of yarn. • Effective in acid bath. • No hard water precipitates. • Softens and lubricates the fibers. Leaves yarn in excellent condition for subsequent operations. • Maximum safety.

* Talk over your Orvus needs with your Procter & Gamble salesman.

Procter & Gamble

The Case of the Company that Mushroomed

The men had keen vision! They could see their company doing a far greater volume of business — *provided,* it could manufacture quantities of merchandise . . . keep stock on hand at all times!

But to these men . . . gathered in the Conference Room . . . it looked like a dream that could never come true.

For to make the venture pay worthwhile profits — substantial shipments of raw materials must be imported from all corners of the world! Supplies of finished goods must be stored in warehouses or on their own premises . . . always ready for immediate sale. Such an expansion would cost far more than the company could afford. Where could they turn?

* * * *

Before the month ended, this company signed contracts for *all* the imports they would need throughout the year! For JAMES TALCOTT, INC. with characteristic liberality had not only advanced them the necessary funds on their merchandise but did so without any interruption of their normal business.

Because it is the policy of JAMES TALCOTT, INC. to *work out* a method of handling any reasonable deal, this company is now doing a much larger business . . . is operating *without interference* and *without sharing the profits.*

Why James Talcott, Inc. Is America's Liberal Factor

Almost a century of experience in all types of financing and factoring, involving over one billion dollars, has shown us how to solve any business financing problem, especially where liberality is important. Such an understanding viewpoint means more profits to Talcott clients.

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Southern Correspondent, Clarence Knowles, 1734 Candler Building, Atlanta 3, Georgia

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QUALITY OF FABRIC:

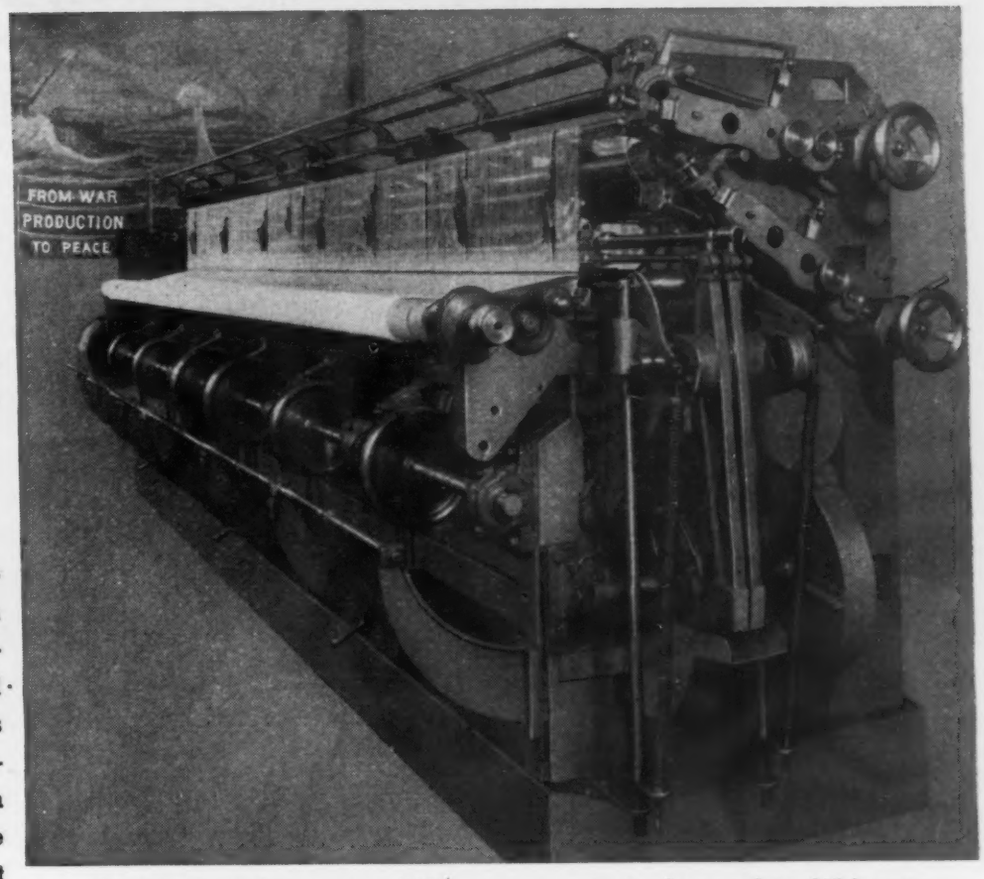
Experts say second to none *the best tricot fabric ever produced.*

EASE OF OPERATION:

Proper height for operator to work in natural position. Simple adjustments.

OTHER IMPROVEMENTS:

Exclusive base design eliminates vibration. Minimum tension stroke avoids whipping of threads. These and many other improvements assure high quality, versatility, and big production over a long and carefree life. See it in operation at our plant.



Capable of speeds in excess of 500 courses per minute. Accommodates 21" beams or any other standard size. Two bar, also prepared for future three bar work. 26 gauge, 180 inch width.

The Robaczynski "V" Type Flat Knitting Machine

Automatic setting of stitches to FOUR positions.

Automatic change of yarn carriers on FOUR bars.

Rear chain drive.

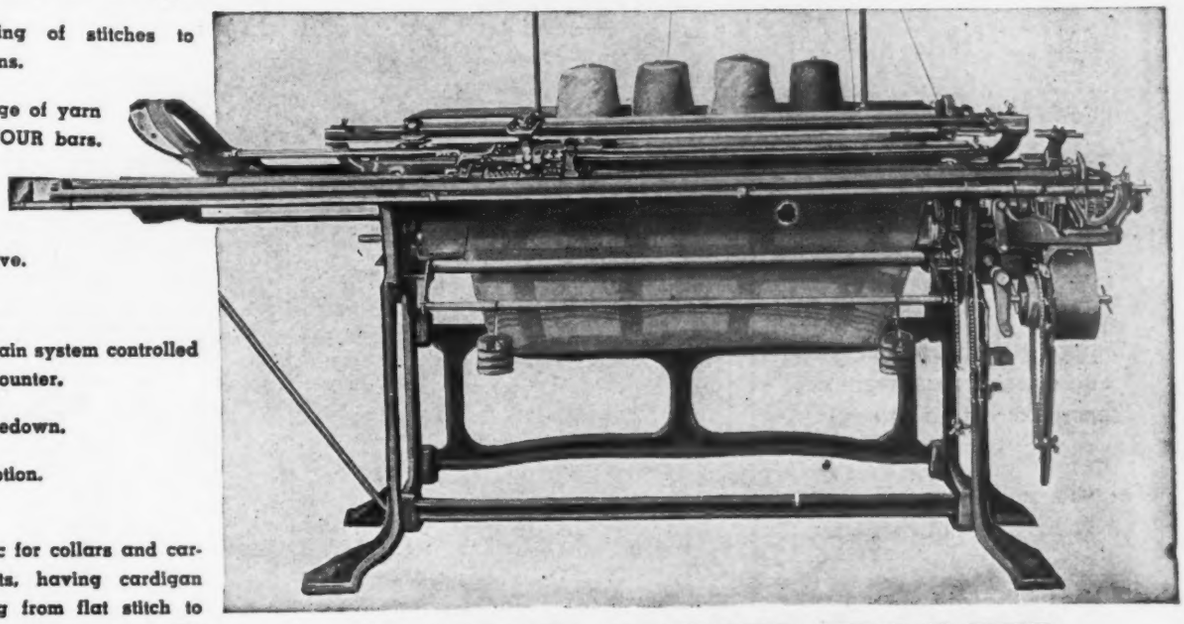
Motor driven.

Double short chain system controlled by a drum counter.

Metal cloth takedown.

Electric stop-motion.

Fully automatic for collars and cardigan garments, having cardigan locks, changing from flat stitch to cardigan stitch, or vice versa. We will also build machines, on request, with sinkers instead of high and low butts to make 1 and 1, or 2 and 2, and then jersey stitches. Sinkers are safe and fool-proof.



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PURL STITCH Links and Links and FLAT KNITTING MACHINES

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NYLTEX
FOR KNITTING
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Use in trough

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Does Not Strip Size

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We invite you to submit to us your problems on weaving and knitting equipment. Write today.

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DESIGNERS AND BUILDERS OF SPECIAL MACHINERY
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cotton shippers gain foreign trade, they effect an international flow of means of production instead of products of production, with mills gravitating to those areas in the world where conditions, including cost of labor, are most attractive. Mr. Rose believed that grower and manufacturer must settle their differences at home before any one-sided action was taken.

Dr. Burt Johnson, of the Institute of Textile Technology, told of the research which is under way both at Charlottesville and in the field on treatment of textile-mill wastes to guard against stream pollution and to meet laws on this subject which have been passed in Virginia and elsewhere.

Accident Costs

(*Continued from page 131*)

of $12 weekly, means payment of $720 plus disfigurement, for the loss of a thumb; while an average weekly wage of $30 which produces a compensation rate of $18 weekly, means payment of $1,080 plus disfigurement for loss of the same member. The reduction in injury costs that year amounted to 27.4%.

The next step was to examine all the causes of accidents that could be gathered, and ascertained the fundamentals of accident prevention, so that by taking advantage of the knowledge of others and their experience, a practical and effective system could be formulated. The knowledge and experience of others was systematically recorded, otherwise a gain would not have been made except by costly experience. From these studies, certain conclusions were arrived at, upon which the system of accident prevention was based. These conclusions are summarized in Fig. 3.

COST DATA. The results of the system speak for themselves. Line *a* upon the chart shown in Fig. 4 reveals compensation costs by years after the system was put into effect as follows: 1943-44, $2.94 per 1,000 manhours; 1944-45, $2.51; 1945-46, to date, $2.30. Now by reference to line *b* upon the chart, the effect upon the cost of injuries is shown. The factor of wage rise year by year is eliminated by referring all injuries paid back to the 1938 wage scale. By years the experience was as follows:

1938-39—$1.67 cost per 1,000 man-hours
1939-40— 1.56 relative cost—a decrease of 6.5%
1940-41— 3.11 relative cost—a rise of 86.2%
1941-42— 3.75 relative cost—a rise of 124.5%
1942-43— 3.04 relative cost—a decrease of 19% from 1941-42
1943-44— 1.45 relative cost—a decrease of 61.3% from 1941-42
1944-45— 1.35 relative cost—a decrease of 64% from 1941-42
1945-46— 0.95 relative cost—a decrease of 74.7% from 1941-42

(The total decrease from 1938-39 levels was 43.1%)

(*Continued on page 236*)

DRAPER
Dependable
SOAPS

For more than 85 years, DRAPER has been providing better soaps for better fabrics.

The Textile Industries long have known that "Depend on DRAPER" has real significance, for the users of DRAPER Dependable SOAPS are producing better cloth.

Write for a demonstration of DRAPER SOAP *quality*.

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SOAP Co.
DIVISION OF
CONTI PRODUCTS CORP.
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Hydrogen Peroxide

Reg. U. S. Pat. Off.

SAFE—soft handle and high tensile strength
ADAPTABLE—to modern bleaching processes
VERSATILE—an ideal bleach for all fabrics
ECONOMICAL—on basis of overall costs
SUITABLE—for your bleaching problems

Hydrogen Peroxide is the standard bleaching agent for wool, silk, rayon, and cotton knit goods. It is also an excellent bleaching agent of woven cotton fabrics for the production of full whites as well as "bleach bottoms," for dyeing and printing, and for bleaching cotton yarn in package machines.

Penn Salt technologists are at your service to aid in your bleaching problems. You are invited to consult them or to write direct to us for specific information about Hydrogen Peroxide and other Penn Salt products.

Penn Salt Hydrogen Peroxide is supplied in 120 lb. carboys and 265 lb. drums.

Other Pennsylvania Salt Chemical Products used in the Textile Industry

Caustic Soda • Soda Ash • Sulphuric Acid • Hydrochloric Acid • Chlorine • Perchloron* • Sodium Hypochlorite • Chloride of Lime • Bleaching Powder • Carbon Bisulphide • Ammonium Persulphate • Potassium Persulphate • Anhydrous and Aqua Ammonia.

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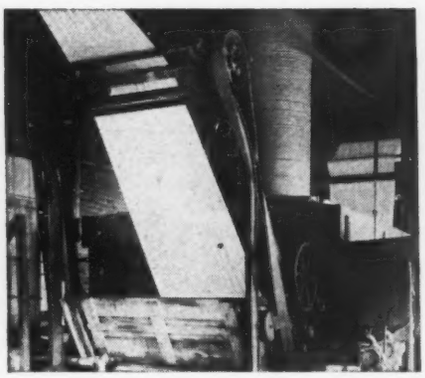
NEW YORK • CHICAGO • ST. LOUIS • PITTSBURGH • CINCINNATI • MINNEAPOLIS • WYANDOTTE • TACOMA

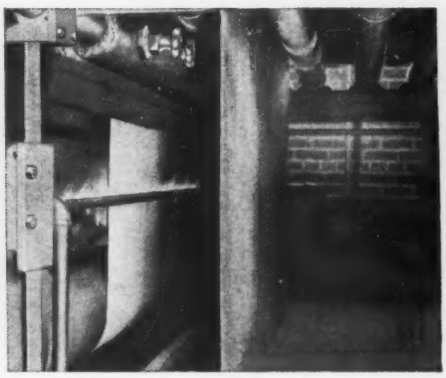
TEXTILE PROCESS... Singeing

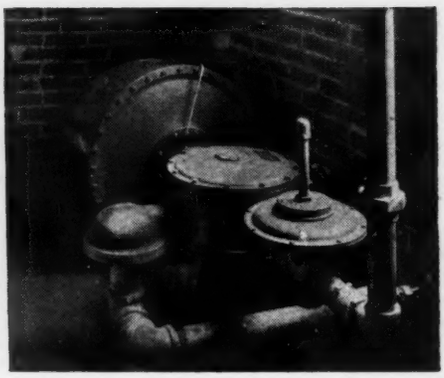
MATERIAL ... Cotton Cloth

PROCESSING RATE.. 225 to 300 yards/minute

FUEL... GAS







There's nothing new about this utilization of the productive flames of GAS for processing of cotton cloth. The Cold Spring Bleachery at Yardley, Pennsylvania, has been operating Gas-fired singeing equipment since 1933.

The simplicity of Gas-fired Textile Processing Equipment is illustrated in the accompanying photographs. Cotton cloth, 36 inches to 72 inches wide, travels vertically past the horizontal singeing burners. A premixing machine with automatic regulator supplies the properly controlled GAS singeing flame.

So accurate is the control equipment, and so dependable is the GAS supply, that the cloth is uniformly processed regardless of width, and the singeing accomplished without burning the cloth.

The flexibility of GAS and modern Gas Equipment assure processors that equipment for textile operations such as sizing, calendering, tenter frame drying, can be installed with minimum capital expenditure and minimum maintenance time or effort.

To meet present-day production goals you need GAS, the production-line tool, wherever heat is required in textile processes. The Industrial Engineer at your local Gas Company has assembled information on the application of Gas Equipment which you will find of real value.

MORE AND MORE...

THE TREND IS TO GAS

FOR ALL INDUSTRIAL HEATING

AMERICAN GAS ASSOCIATION

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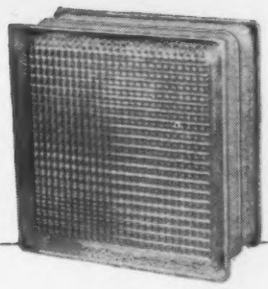
Cut operating costs
Improve operating conditions

with



PC GLASS BLOCKS

LARGE panels of PC Glass Blocks admit floods of diffused daylight. The light is distributed so widely as to increase useable floor space, frequently enabling more men, more machines, to turn out more goods in the same shop. Much less artificial light is needed, so lighting costs take a sharp drop.

Other savings are traceable to the *insulating* properties of PC Glass Blocks. The thick walls of glass and the dead air space inside the blocks prevent heat losses, minimize condensation in humid workrooms. The solid panels of glass blocks leave no cracks or joints to admit chilling drafts. So precision machines near light openings run at top speed and efficiency even in zero weather. And, of course, less fuel is needed, so heating costs hit new lows.

PC Glass Blocks seldom need maintenance or repairs. Their surfaces—being glass—are quickly and easily cleaned. PC Glass Blocks do not break readily or leave unsightly gaps as do broken panes. They eliminate the necessity for repairing and repainting window sash. All of these features add up to *important money-savings* over the years.

For your convenience we have recently assembled and published complete, authoritative data on the many and varied uses of PC Glass Blocks in building construction. Your free copy of our 28-page illustrated handbook is now ready. It contains engineering data, typical layouts and specifications, illustrations and lists of the full line of patterns and sizes—and a clear description of *function* of each type of PC Glass Block. Send for this free manual today.

Architect: Louis Wirsching, Jr.

ALSO MAKERS OF
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Please send along my free copy of your new book on the use of PC Glass Blocks for Industrial Buildings. It is understood that I incur no obligation.

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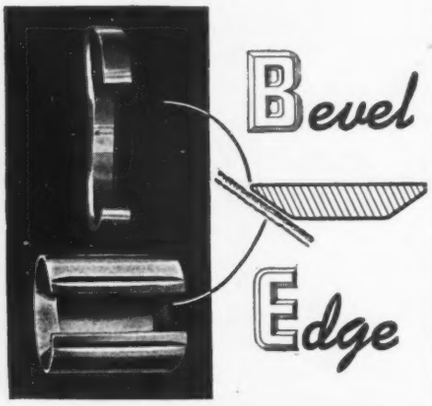

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Promotes smoother running
Safeguards quality

Anti-friction rings — U. S. "Bevel Edge" anti-friction travelers, both are especially timely because they promote maximum production from existing spinning and twisting machinery. Some of the direct benefits from the Bevel Edge travelers are stated by users as follows:

1. Less loading up of travelers on cotton
2. Less fly waste on woolen.
3. Minimizes split ends on rayon, and silk.
4. Much lower end breakage—frequently 8 to 10 fewer per hour.
5. More uniform tension—more uniform yarn.

Note: Selection of the correct size and weight, in which our men assist, is extremely important to assure MAXIMUM result.

U. S. Travelers are made and stocked in ALL styles.

DEPENDABLE DELIVERY—
PROMPT SERVICE CALLS

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AMOS M. BOWEN, President & Treasurer
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"U. S." Men give you Prompt Service!

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M. L. BOLTON—West Philadelphia—Box 7234—Trinity 1438
H. R. FISHER—Concord, N. C.—Box 83—Phone 8988
C. W. SMITH—H. J. SMITH—L. H. MELLOR, Jr., Providence—Gaspee 0100

(*Continued from page 232*)

The average weekly wage has risen 175% in eight years, while costs of accidents as measured by compensation paid, including disfigurement awards which are practically an addition since 1941, have risen only 37.7%, or one-fifth as much.

At Brandon Corp., safety meetings of supervisory personnel are held monthly to analyze reports, and to exhibit progress charts for corporation, plants, and departments. This enables plant and departmental supervisors to visualize their relative standing and progress. Staff work is confined to study, classification, and analytical reporting. In other words, staff assistance does not fix blame but merely reports facts in such a way that production officials are furnished compass, sextant, and chronometer to sail by. Top management receives copies of all reports, and many safety and production betterments have been secured for plant or departmental supervisors as a direct result of discussion of analytical reports and cost sheets held between staff and top management.

Useful Accessories for the Textile Mill

Foot-Pedal Switch

A foot-operated switch for series circuits for use with equipment requiring reliable control of power with complete freedom of the operator's hands has been announced by Electronic Controls, Inc., 44 Summer Ave., Newark, N. J. Switch mechanism is snap-action type and can be supplied either normally open or normally closed with treadle depressed. Capacity is 1000 watts at voltages up to 220 volts a.c. or 32 volts d.c., non-inductive loads.

Electronic Tachometer

A new electronic tachometer designed for measuring rotating speeds from 300 to 50,000 r.p.m. has been announced by General Electric Co., Schenectady, N. Y. Weighing only 19 lb., the device consists of a small pick-up head, 6 ft. of flexible cable, and a measuring unit reading directly in revolutions per minute. A low-speed head provides five speed ranges up to 20,000 r.p.m., while a high-speed head provides three speed ranges up to 50,000 r.p.m.

Water Softener

A type of hot-process-water softener incorporating a sludge-blanket design, which has been announced by The Permutit Co., 330 West 42nd St., New York 18, is said to improve boiler-feed water and to effect substantial savings in chemicals. Built in four models for use with every type of steam generator, the new equipment is reported to reduce the turbidity of softened water, lessen the load on filters, reduce the amount of back-washing, and lower the amount of silica left in the water.

Wear-Test Mount

A new abraser accessory "Dry-mount," said to simplify and speed preparation of specimens for abrasion-resistance testing, has been announced by Taber Instrument Corp., N. Tonawanda, N. Y. Dry-mount is a double-coated adhesive sheet designed to make insufficiently rigid fabrics adhere with uniform grip to metal or cardboard backing. It is reported to eliminate possible wrinkling, buckling, slipping, or stretching of specimen during test and to have no effect on physical properties of the test sample.

Regulating Valve

A new single-seated, internal-pilot, piston-operated reducing valve designed to be remotely adjusted from a conveniently located air-loading panel has been announced by Leslie Co., Delafield Ave., Lyndhurst, N. J.

Known as class LT-3, the valve is reported to be especially adaptable to process-piping arrangements.

Rayon Stabilization

(*Continued from page 139*)

beck to give the fabric a final chance to relax. Soap or synthetic detergents of the sulphated fatty-alcohol type are used with additions of soda ash, tetrasodium-pyrophosphate, or other mild alkalis. The bath should be kept alkaline, since the application and curing of the resin leaves the fabric in a decidedly acid condition. The temperature of the wash varies from 120° to 160° F., depending on the fastness of the dye job, and is generally carried out for 15 to 20 min.

Although extracting and opening should be carried out as carefully as possible, the operation need not be confined to centrifuging and hand opening. Mechanical opening and suction-slot extracting may be used, providing the final drying is such as to allow relaxation of the fabric. Once more the overfeed pin tenter can enter the picture as an ideal dryer in obtaining this needed relaxation. This does not mean that the loop or Airlay dryer does not allow sufficient relaxation. The important point is that goods from the pin tenter are finished, whereas those from the loop or Airlay dryer require steam framing to be made salable; and this framing, even under the best of conditions, may

(*Continued on page 240*)

The Onyxsans*

Get Lasting Softness and Drape

YOU can give cotton and rayon fabrics a soft, smooth hand, with draping qualities not ordinarily found in such goods. For example, there is no better finish for candlewick spreads than you can get with

The ONYXSANS*

These unique softeners are cation-active. This means that the softness, smoothness and drape they impart to cotton and rayon are *permanent.* Onyxsan lastingly softens cotton and rayon by the effects produced IN the yarn. This is much different from surface oiling. After twenty standard washings a spread treated with Onyxsan will retain virtually all its original softness.

Easy to Use

Thoroughly scoured cloth is given a full dip in the selected Onyxsan solution and then passed over the cans, through the drying range and calendered.

Stable and Uniform

The Onyxsans are synthetics, made from uniform raw materials from a dependable source. Every lot is identical with every other lot. Not only are they uniform and stable, but fabrics finished with Onyxsan do not become rancid in storage. There is no development of odor, no mark off and no stiffening of goods.

For Other Textiles

Onyxsan softness is permanent in cotton and rayon. On silk and wool, the effect is not fast to washing, but the touch can be greatly improved by treatment. Onyxsan is particularly valuable on mixed wool-rayon, cotton-rayon and rayon-silk fabrics. It is in wide use for giving a silk-like softness to Bemberg-topped hose.

Ask for Technical Data and Reports on the Onyxsans Suited to Your Particular Fabrics.

INVESTIGATE These Other ONYX SPECIALITIES

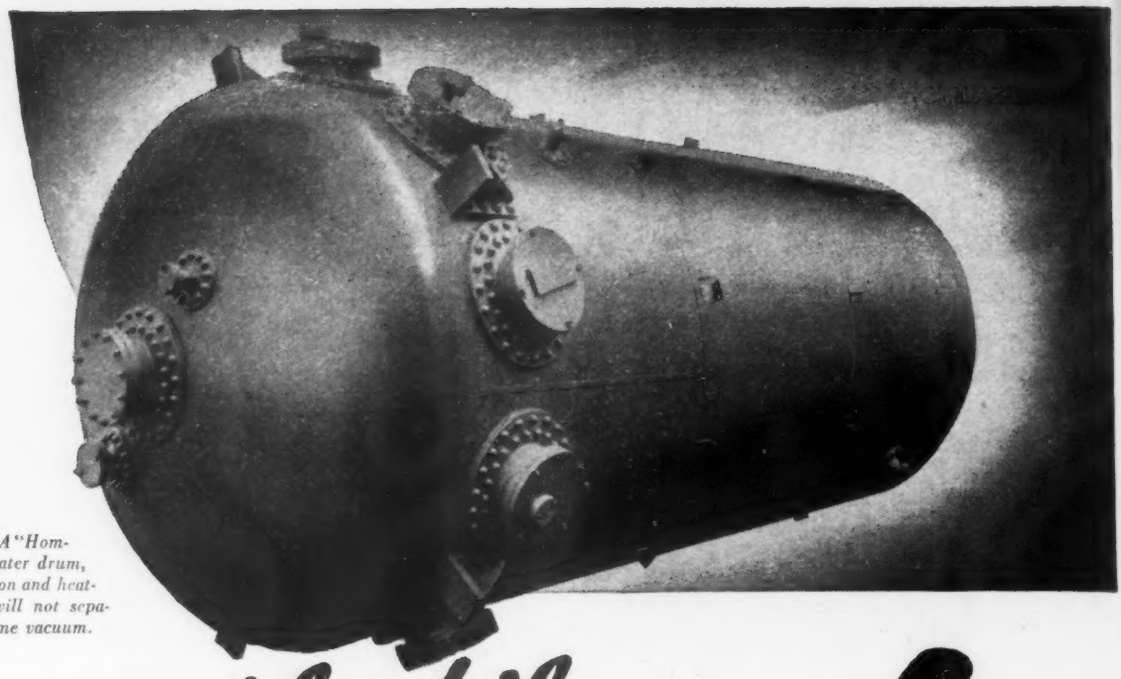
REPEL-O-TEX D3 and D4
For providing durable and effective water repellency to cotton, viscose, acetate and other fabrics.

NEUTRONYX 228
A non-ionic, non-foaming surface active detergent and emulsifying agent for all fabrics, with unusual value in scouring acetate, rayon and wool (in acid or neutral solution). It is a highly useful auxiliary for simultaneous scouring and acid dyeing of wool.

*Patented

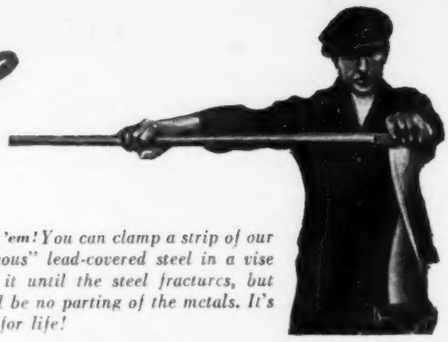
ONYX OIL & CHEMICAL COMPANY
JERSEY CITY 2, N. J.
CHICAGO • PROVIDENCE • CHARLOTTE • ATLANTA
In Canada: ONYX OIL & CHEMICAL CO., LTD.—MONTREAL, TORONTO, ST. JOHNS, QUE.
For Export: ONYX INTERNATIONAL, JERSEY CITY 2, N. J.

onyx CHEMICALS FOR DYEING AND FINISHING



You can't beat this drum. A "Homogeneous" lead-lined treater drum, designed to resist corrosion and heat-creep. Its lead lining will not separate — even under extreme vacuum.

Bonded for Life



Try and part 'em! You can clamp a strip of our "Homogeneous" lead-covered steel in a vise and twist it until the steel fractures, but there will be no parting of the metals. It's bonded for life!

No Wonder "HOMOGENEOUS" Lead-lined Equipment stands up under Extreme Operating Conditions

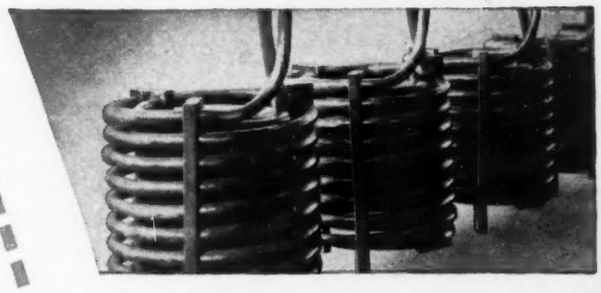
The handling of acids and other corrosive liquids is frequently very tough on equipment.

This is particularly true when the problem is aggravated by conditions involving vibration, vacuum, high pressure, repeated thermal changes and shock impact.

To meet such conditions — as well as those where heat transfer is important — National Lead offers a complete range of "Homogeneous" Lead-lined or Lead-covered Equipment.

Its outstanding feature is the tenacious adhesion of the lead to the steel, copper or brass of which the apparatus is constructed. By our special "Homogeneous" method, the lead lining or covering is inseparably bonded — giving positive assurance that it will not creep, buckle or in any way separate. And, because no tin or tin-lead solder is used in the bonding, the equipment can be used safely at temperatures closely approaching the melting point of the lead itself.

Thus, under shock, vibration, vacuum and temperature change, this rugged "Homogeneous" equipment goes on doing its job—cutting down costly replacements, and even more expensive shut-downs—proving itself, time and time again, a sound, profitable investment.



***Some like 'em hot, some like 'em cold.** The four coils illustrated are lead-covered copper for use in a pigment manufacturing plant. National Lead "Homogeneous" heating and cooling coils are in wide use throughout industry.*

Specify "Homogeneous" for:

Acid car and trailer tanks, acid columns, agitators, autoclaves, digestors, heat exchangers, vacuum tanks, lead-covered heating and cooling coils and other similar uses.

Made to Specification — Because no two acid handling projects present exactly similar requirements, all National Lead "Homogeneous" equipment is fabricated to specification . . . specially designed and constructed to meet given conditions.

* * *

And remember, whether you need lead pipe, fittings, valves . . . *anything in lead* up to a complete acid recovery plant . . . National Lead can supply you. And give you the benefit of years of experience in thousands of acid processing applications.

If Acid Handling is your Problem . . .

Go "National" for Lead

NATIONAL LEAD COMPANY
111 Broadway, New York 6, N. Y.
Offices and Plants in Principal Cities and Canada

Your Air—

- CLEANED
- HUMIDIFIED
- WARMED
- DEHUMIDIFIED
- OR COOLED

JUST AS YOU WISH IT WITH "Buffalo" EQUIPMENT

This Buffalo Wet Glass Cell Humidifier Has 85,000 C.F.M. Capacity

That's the wide range of air processing "Buffalo" Air Conditioning Apparatus offers your plant or mill on an economical basis. More than that, you may choose "Buffalo" units to perform various combinations of the above air treatments to suit your particular needs.

Low power and maintenance costs are assured by the use of "Buffalo" fans and pumps wherever required in "Buffalo" equipment.

Proper air conditions are your "profit factor" in textiles . . . both for worker efficiency and product manufacturing efficiency. Consult your local "Buffalo" representative for expert advice on processing your air!

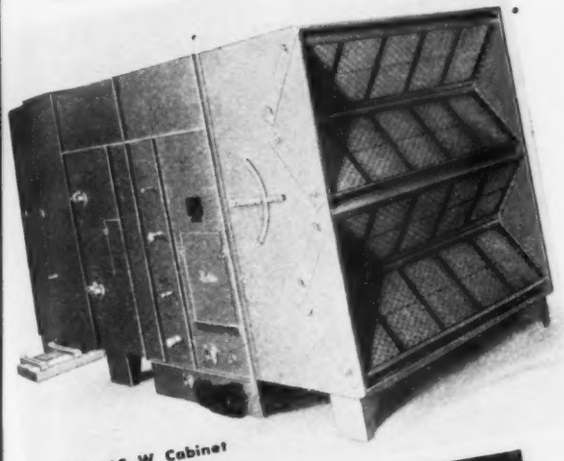
The Facts on Air Conditioning!

Bulletins 3142-A and 3457 give you a wealth of information on the many types, sizes, capacities and applications of "Buffalo" units available to you. Send for them!

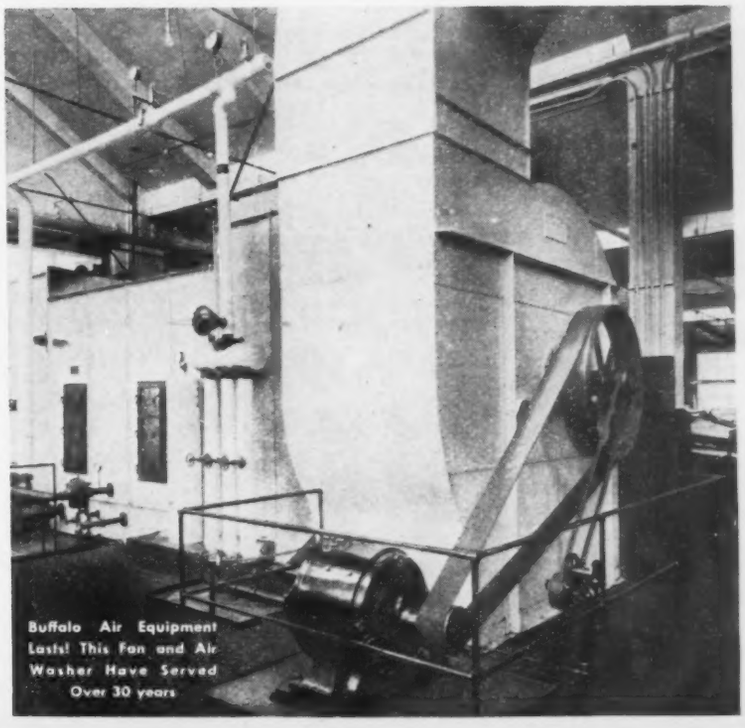
BUFFALO FORGE COMPANY

184 MORTIMER STREET BUFFALO, N. Y.

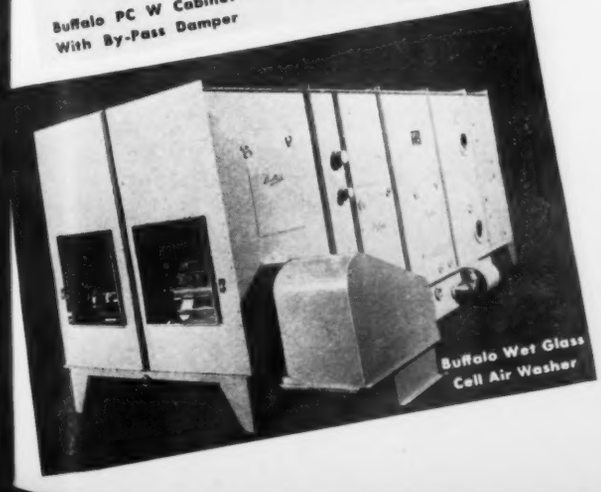
Canadian Blower & Forge Co., Ltd., Kitchener, Ont.



Buffalo PC W Cabinet With By-Pass Damper



Buffalo Air Equipment Lasts! This Fan and Air Washer Have Served Over 30 years



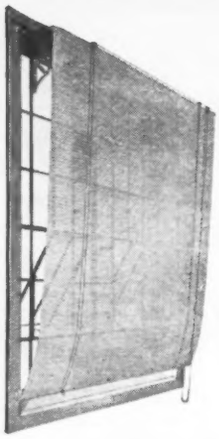
Buffalo Wet Glass Cell Air Washer

"Buffalo" "First For Fans"

Air-Conditioning CABINETS

3-Way Protection
Against GLARE, DRAFT, Sun HEAT

Roll 'em DOWN on BRIGHT DAYS



Roll 'em UP on DARK DAYS

RA-TOX

WOOD SPLINT VENTILATING

SHADES

for TEXTILE work rooms and storage rooms

RA-TOX Shades allow Finger Tip Control of light, Shade and Ventilation, that is; LIGHT without glare; SHADE without darkness; VENTILATION without drafts. Will help maintain high humidity so necessary in weave rooms, as wood splints act as insulators.

This 3-way action of RA-TOX Shades adds comfort and safety for your employees—reduces "Eye Strain" and "Fatigue"—helps to increase efficiency, reduces work spoilage and accidents.

With RA-TOX SHADES you can "roll 'em up" on dark days or "roll 'em down" on bright days to offset changing daylight conditions. A type to fit every industrial window.

RA-TOX WOOD LINK FLOOR MATS

Resistant to **WATER, OIL and GREASE** **NON-SLIP**

The resilient wood links of RA-TOX FLOOR MATS furnish foot comfort and ease "leg Fatigue" for your employees. Accidents and sickness are reduced by keeping feet dry and off slippery floors.

RA-TOX FLOOR MATS are made entirely of treated and stained hard-wood links. Made to stand hard usage. Stock or special sizs.

Other RA-TOX Products—Custom-built Venetian Blinds, Steel Ventilators for Industrial Windows and Glass Block Walls.

Write for Latest Bulletin
HOUGH SHADE CORPORATION
* INDUSTRIAL DIVISION *
1026-D JACKSON ST., JANESVILLE, WIS.

(*Continued from page 236*)

stretch the fabric warpwise and reduce the degree of crease resistance and shrinkage control.

DEFINIZE PROCESS. A second process which has been recently developed to achieve shrinkage control is the "Definized" process, developed by Alrose Chemical Co. The process in itself is relatively simple, consisting of the application of caustic soda of high concentration to the gray goods, followed immediately by neutralization of the caustic soda. The fabric is then scoured and dyed in the usual manner. Careful control is as necessary with this process as with the resin applications.

The first step in this process is the application to the gray fabric of a protective agent. This is applied on a padder at 140° to 150° F. The padded goods are then dried on a tenter frame at gray width. This framing to gray width is necessary to maintain the finished width of the fabric through later operations. Care should be taken during frame drying to allow at least some warp shrinkage to take place, else the hand of this finished fabric may be thin due to low pickage. The next step is really a combination of three operations; namely, application of the caustic, neutralization of the caustic, and rinsing.

Caustic soda of 40% concentration is applied on a padder at 80° to 100° F., with the pickup adjusted to 90%. The fabric is then skied for from 5 to 30 sec. and passed into a neutralizing bath containing 5 to 10% sulphuric acid, depending on the volume of liquor of the neutralizing bath and the length of time that the fabric is exposed to the acid.

It cannot be too strongly stressed that neutralization must be carried out with the greatest dispatch. The strength of the neutralizing bath must be such that there is no gradual neutralization of caustic soda, but an almost complete and immediate neutralization. If neutralization is slow, a harsh hand and reduction of tensile strength will almost surely occur, since it is at lower concentrations that caustic is most reactive toward regenerated cellulose. Neutralization is followed by hot-water rinsing and a passage through soda ash to neutralize any excess acid.

GLYOXAL PROCESS. The third process for stabilizing viscose-rayon fabrics is Cluett Peabody's "BR-1 rayon stabilization process." In this process, the previously boiled-off and dyed goods are padded through a solution of glyoxal and an acid catalyst. Care should be taken to allow sufficient immersion time, either by use of an auxiliary box or skying roller, to allow thorough penetration of the fabric. The pad should be set to give an expression of about 100%. The goods are then dried on a housed tenter frame, care being taken that the fabric, as it comes from the tenter frame, be just dry, so that no curing can take place during drying.

The curing operation comes next and is best carried out in the loop or Airlay dryer. The curing conditions may be adjusted as to time and temperature to suit the individual machine. The dryer, however, should be equipped with a good temperature regulator, so that the temperature of the dryer can be carefully controlled.

Following curing, the goods should be washed to remove excess chemicals and to neutralize the acidity of the fabric. This should be done in relaxed form in the beck or continuous washer in an alkaline bath. The goods are then opened and extracted on the suction slot, or centrifuged and opened by hand.

The drying of these fabrics should always be done in a relaxed condition, preferrably in the loop or Airlay dryer. The finish framing should be done only after making a preliminary wash test to determine the proper finished width. Decatizing or calendering may follow the framing if necessary for finished hand, but warp tension should be held to an absolute minimum.

Rayon fabrics, when properly treated by this process, show excellent shrinkage control when subjected to repeated launderings. An interesting result has been observed in tests on glyoxal-treated fabrics in regards to tensile strength. Even though the tensile strength of glyoxal-treated fabrics may be somewhat less than an untreated control, it has been found that when both are subjected to multiple launderings, the strength of the untreated sample drops at a considerably greater rate than the glyoxal-treated sample and will, before too many launderings, drop to a lower strength than the glyoxal-treated sample.

The glyoxal process may be applied to fabrics made of viscose rayon or blends with acetate rayons, providing that the viscose fiber constitutes the major portion of the blend. The process is not considered applicable to fabrics containing cotton because of the tendency of the acid catalyst to tender the cotton fiber at the temperatures used for curing. The "BR-1 rayon stabilization process" stabilizes viscose-rayon fabrics by chemical reac-

(*Continued on page 244*)

Hooker Chemicals for Textiles

If you are interested in bleaching, dyeing and finishing textiles, Hooker can supply many of the chemicals you need. Your work will be made easier, your operations will run smoothly and your product will be of uniform high quality when you use Hooker Chemicals.

Careful control combined with specially developed manufacturing techniques of Hooker Chemicals assures you of uniformly high quality in every shipment to your plant.

Listed below are some of the Hooker Chemicals that are serving the dye and textile industries. These and many others are listed in the Hooker General Products List, Bulletin 100. Technical data sheets are also available describing each product more completely. Just write "Bulletin 100" and the names of any products on which you would like more information on your letterhead and sign your name. The literature you want will be on its way by return mail.

PRODUCT *Chemical Formula; Molecular Weight*	HOOKER SPECIFICATIONS	SUGGESTED USES
Aluminum Chloride Anhydrous $AlCl_3$; 133.3	Aluminum Chloride ..... 98.5% Min. Iron ..... 0.05% Max. Non-sublimables in air at 950°C, 1.5% Max.	Catalyst in synthesis of dyestuffs and intermediates.
Benzoic Acid-USP and Tech. C_6H_5COOH; 122.1	Benzoic Acid ..... 99.3% Min. Water ..... 0.2% Max.	Manufacture of dyes. Mordant.
CP—70 $C_{24}H_{29}Cl_{21}$; 1063	Chlorine ..... 71±2% Iron ..... 0.01% Max. Softening range ..... 90° to 100°C A chlorinated paraffin resin in powder form. Soluble in aromatic solvents, difficultly soluble in mineral spirits.	Treating textiles to make water, fire and mildew-proof.
Ferric Chloride Solution $FeCl_3$; 162.2	$FeCl_3$ ..... 40 to 42% $FeCl_2$ ..... 0.20% Max. Sp. Gr. ..... 1.44±.01	Mordant in dyeing and printing textiles; as oxidizing agent in making dyes.
Lauryl Pyridinium Chloride $C_5H_5N(C_{12.6}H_{26.2})Cl$; 292.0	Mottled tan, semi-solid. Solubility in water is 60 gms. per 100 gms. of water. Alkyl Pyridinium Chloride (Calc. as C_{12})...85.0% Min.	Cationic detergent. Wetting and cleaning agent for textile fibers. As a leveling agent and color modifier in dyeing.
Orthodichlorbenzene $C_6H_4Cl_2$; 147	Clear, colorless liquid. Freezing Point ..... −10° to −22°C Boiling Range ..... 6° including 179°C	Manufacture of pyrocatechin, dye intermediates, other synthetic organic chemicals. Degreasing wool.
Sodium Sulfhydrate NaSH; 56.1	NaSH ..... 70 to 72% Fe ..... 5 ppm Max. Na_2S ..... 1 to 2 % NaCl ..... 1% Max. Na_2SO, $NaHCO_3$ ..... 1% Max. Cu, Ni, Cr, Mn, Pb ..... 1 ppm Max. Water of crystallization ..... 28 to 26%	Desulfurizing rayon; calico printing; in sulfur dye baths.
Sodium Sulfide Na_2S; 78.1	Na_2S ..... 60 to 62% Fe ..... 8 ppm Max. NaCl ..... 1.5% Max. Other Na Salts ..... 2.0% Max. Cu, Ni, Cr, Mn, Pb ..... 1 ppm Max. Water of crystallization ..... 36.5 to 34.5%	Desulfurizing rayon; calico printing; in sulfur dye baths.

HOOKER ELECTROCHEMICAL COMPANY

HOOKER CHEMICALS

4 FORTY-SEVENTH ST., NIAGARA FALLS, N.Y.
New York, N.Y. Wilmington, Calif. Tacoma, Wash.

Caustic Soda **Chlorine** **Muriatic Acid** **Paradichlorbenzene** 2140

BRITISH TEXTILE MACHINERY

Copies of This Catalogue will Shortly be available.

The ever-widening fields in which materials consisting wholly or partially of cotton waste are used has made the preparation, carding and spinning of waste a highly specialized industry, involving the use of specially designed machines at every stage of manufacture.

We have an unequalled range of machinery for the treatment and spinning of waste and invite all firms interested to make application on their business letter-heads for copies of our new catalogue on the carding of cotton waste.

PLATT BROS

& COMPANY LIMITED

CENTRAL SALES DEPT.

OLDHAM ENGLAND

marketing the products of .. ..

PLATT BROS & CO. LTD.

HOWARD & BULLOUGH LTD.

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BROOKS & DOXEY LTD.

ASA LEES & CO. LTD.

WAI-4

TRADE MARK REGISTERED

NON-FLUID OIL • • •

IN U.S. PAT. OFFICE & FOREIGN COUNTRIES

PROVIDES BETTER LUBRICATION AT LESS COST PER MONTH

Produced from highest grade petroleum, NON-FLUID OIL overcomes many of the drawbacks inherent in ordinary oil and grease. In NON-FLUID OIL you get these advantages:

1. *Outlasts Liquid Oil 3 to 5 Times.* Because NON-FLUID OIL goes farther, you save on initial costs, cut down on application costs and increase lubricating efficiency.

2. *Lubricates Dependably.* Every drop of NON-FLUID OIL stays put, right where it's needed to do a full-time lubricating job. When you use ordinary oils, two drops drip away for every drop that gets in where oil is needed. You pay for three gallons of oil, but only one gallon really does its stuff. NON-FLUID OIL eliminates this waste!

3. *Efficient at all Temperatures.* Doesn't thin-out at high temperature like ordinary grease . . . won't harden or flake-off in cold weather.

4. *Protects.* Neutral and non-corrosive—NON-FLUID OIL will not pit or corrode the finest polished surface. It forms a protective film which seals bearings against moisture or fumes and grit and dirt.

Manufacturers of ball and roller bearings, electric motors, and machinery used in every industry both use and recommend NON-FLUID OIL for most satisfactory service at lowest upkeep costs. Write for descriptive bulletins and testing samples.

Southern District Manager:
FALLS L. THOMASON
Charlotte, N. C.

WAREHOUSES:
Chicago, Ill. • St. Louis, Mo. • Providence, R. I. • Charlotte, N. C. • Atlanta, Ga. • Detroit, Mich. • Greenville, S. C.
Works: Newark, N. J.

50 YEARS OF LUBRICATION SERVICE TO INDUSTRY

NON-FLUID OIL

NEW YORK & NEW JERSEY LUBRICANT CO.

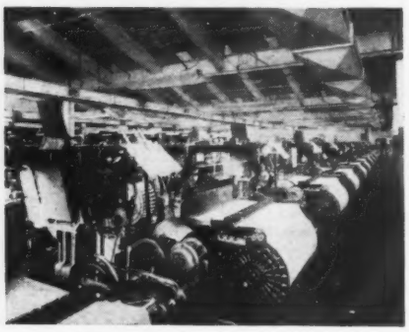
292 MADISON AVE. NEW YORK 17, N.Y.

THIS SAFE WEEK-END HUMIDIFICATION COSTS SO LITTLE—

—it doesn't pay to be without—

AIR-PERME-ATOR

"Dry Humidification"



"500 TIMES FINER THAN SPRAY"

Monday mornings, after week-end shut-downs, can be hectic for mills without proper humidification — broken ends; lengthy loom adjustments; tensions changed; shuttles loose; loom fixers running wild; etc., etc.

Even with spray humidification, mills are all set for trouble, should a control go out during the week-end shut-down, and cause damage by over-spraying.

THESE THINGS CAN'T HAPPEN WITH AIR-PERME-ATOR

No free moisture is thrown into the air by Air-Perme-Ator, which humidifies the air inside the machine and circulates it evenly throughout the plant. Proper humidity is maintained during the entire period.

On Monday morning—there are few or no broken ends, few loom adjustments—tensions are correct, and shuttles do not flyout.

Air-Perme-Ator is the most efficient humidifying system you can have at moderate cost—requires no extensive space, servicing or maintenance—and protects you from a host of troubles. It is being used today by scores of mills.

FULL FACTS AND CASE HISTORIES GLADLY SENT ON REQUEST.

AIR-PERME-ATOR MFG. CO.

300 Preakness Ave. Paterson 2, N. J.

(*Continued from page 240*)

tion between the cellulose of the fiber and the glyoxal. There is no danger of chlorine retention; therefore, it is particularly applicable to whites. There is a slight yellowing of the fibers with this process, which yellowing, however, is easily removed by a chlorine bleach. Fabrics which would normally require bleaching should, therefore, not be bleached until after the application of the glyoxal.

Acetate Slashing

(*Continued from page 133*)

there are so many other factors influencing a good size formula, it seems hardly worth while to insist on a very narrowly defined grade.

The mesh of the gelatin is not too important, just so long as the size is considerably above that of a fine powder and is not too coarse. The particle size should not prevent the material from wetting out readily in cold water.

It might be mentioned here that the error which is most commonly found in the preparation of sizing solutions is the failure to wet out gelatin very thoroughly in cold water before attempts are made to dissolve it. This error occurs even more often than does the opposite one of applying too much heat to gelatin, thus breaking it down. It is generally agreed that gelatin should not be heated much above 170° F. for any considerable period of time—not for more than even a few minutes.

SOFTENERS. A complete listing of all of the various elements which are used as softeners in acetate slashing formulas would include thousands of items. All sorts of oils have been used—mineral, animal, and vegetable—as well as synthetic materials. For many years, cocoanut- and olive-oil combinations were considered to be very good as softeners; and, later on, cottonseed and many other oils under a variety of trade names were used. But one of the best and one which has been demonstrated as being most compatible with animal gelatin is sulphonated tallow. Here again, there are a great many varieties of products which are sold under many different names and which have as their base or principal ingredient sulphonated tallow.

It is in regard to softeners that most of the variations in size formulas are usually found. Without going into the merits and demerits of the thousands of possible things which can be used, the writer wishes to state simply that, based on film tests, microscope examinations, and use, sulphonated tallow has been found most suitable and is the only softener which is needed to make a successful sizing solution which uses gelatin as its main ingredient. Admittedly, however, many other softeners can be and are being used successfully.

This leaves only one other material to be considered for most formulas—a penetrant. As was pointed out earlier, acetate rayon is not particularly hygroscopic; and for all formulas, a good penetrant is needed. There are a great many synthetic and natural penetrants, but it should be borne in mind that a penetrant which may give good test results in cold water may not be particularly effective at 130° to 150° F., at which temperature the size is applied.

The simplest method for testing a penetrant is to take a small amount of the size solution from the formula that is to be used and make sink tests with small skeins of the very yarn which is to be slashed. It is important that the same yarn be used as is to be slashed, since the finish which is put on the acetate yarn by the manufacturer may not be compatible with the particular sizing materials being used. In other words, a penetrant might be quite satisfactory for one manufacturer's 150/40 acetate but might not be equally satisfactory for yarn from another. Since acetate-rayon manufacturers are so secretive about the finishes they apply to their yarn, about the only thing the practical mill man can do is to test each lot of yarn, using the relatively simple sink test.

It will often be found that the penetrants used have some softening effect on the gelatin; and, many times, the penetrant can be considered as both a softener and a penetrant. When formulas require the penetrant to be changed, particularly if the amount of penetrant which must be used is more than 1 lb. to 100 gal., the effect of the penetrant in softening the gelatin should be studied carefully. This can easily be done by making film tests.

FILM TESTS. Film tests consist of nothing more than placing some of the size solution, as it is to be used, on a pane of plain glass. After the film has dried, preferably in a laboratory which has controlled temperature and humidity conditions, the film can be checked for brittleness, toughness, and oiliness by mere visual examination. If a microscope is available, the film can be examined under it to see whether there are large globules of materials which might not be well dispersed.

The films readily show whether a formula results in a size that is too tough or too brittle, which are two of

(*Continued on page 248*)

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THE LEADING PRE-WAR SILK SOAKING OIL FOR HOSIERY TRAM

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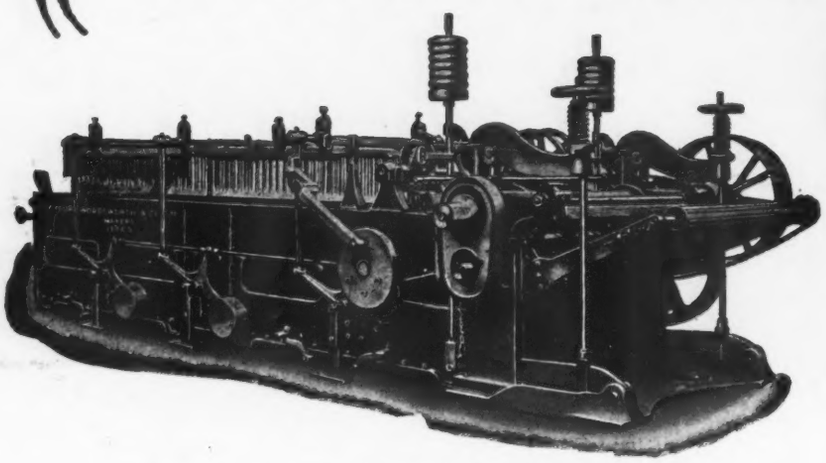

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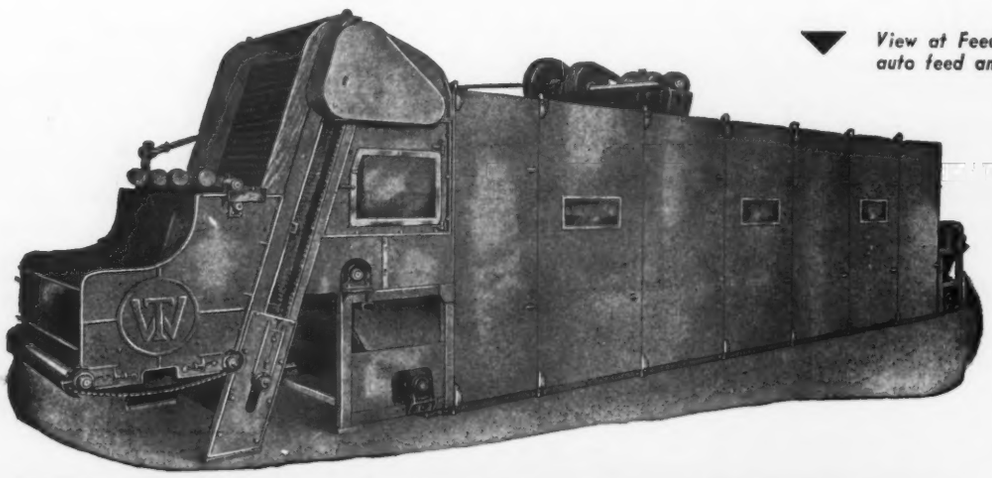
This modern Harrow type machine handles the stock gently and with little agitation through every stage. All the controlling mechanism is below the top of the bowls and all the belts are on one side, permitting rapid inspection of the progress of the wool. Settling tanks extend the full length of the bowls, giving maximum area for dirt settling.



View at Feed end, showing "built-in" auto feed and working side of dryer.

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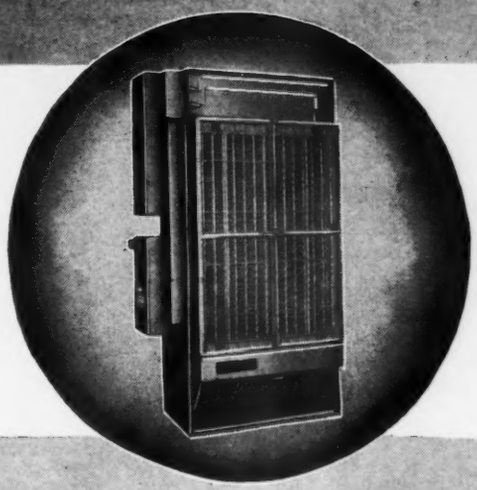

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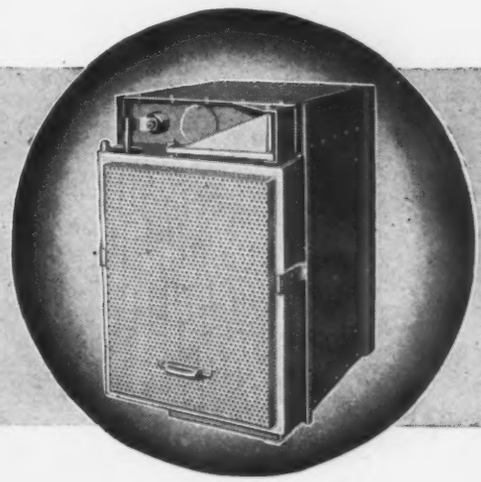

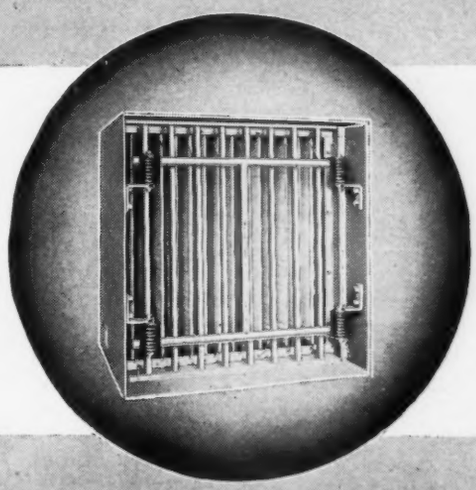

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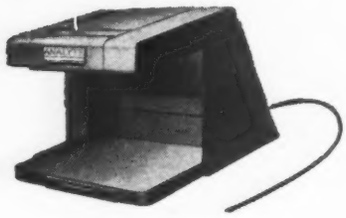

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Slashing Formulas for Acetate Yarn

(100 gal. total)

Acetate yarn	Approximate construction of cloth to be woven	Lb. of gelatin	Lb. of softener	Lb. of penetrant
55 den.	high sley and picks	75	4 to 6	2 to 4
75 den.	high sley and picks	70	4 to 6	2 to 4
75 den.	med. sley and picks	60	4 to 5	2 to 3
100 den.	high sley and picks	60	4 to 5	2 to 3
100 den.	med. sley and picks	55	4	2 to 3
120 den.	med. sley and picks	55	4	2 to 3
150 den.	high sley and picks	55	4	2 to 3
150 den.	med. sley and picks	50	3½	1 to 2
150 den.	low sley and picks	45	3	1 to 2
300 den.	med. sley and picks	45	3	1 to 2

(*Continued from page 244*)

the principal considerations for a formula which sink tests show to be one that will readily go on the particular acetate yarn to be slashed.

In addition to the three principal ingredients (film-forming material, softener, and penetrant), it is often advisable to employ a tint or, on some occasions, an anti-foam agent. Normally, an anti-foam agent is not needed if the gelatin is properly fortified against foaming by the manufacturer. However, there are some instances in which the gelatin does not foam until a penetrant is added, due to the fact that many penetrants cause foam. In such instances, use can be made of commercial anti-foam agents; but some are not too desirable since they upset the formulation and often have a tendency to ride to the top of the solution and go onto the yarn unevenly. There is also some danger of anti-foam agents not scouring out and, by their presence, affecting dyeing of the ultimate fabric.

So far, no mention has been made of the hygroscopic agents which are sometimes used in sizing solutions. The use of a hygroscopic agent is hard to justify and is not recommended by the writer. It is well known that acetate rayon loses strength and is subject to deformation by elongation when it contains a high degree of moisture. Hygroscopic agents are not essential for softening the gelatin and are a poor corrective for "baked" warps (overdried).

Mention should be made of preservatives, since it is quite simple and easy to protect gelatin from putrefaction by using one or two ounces of sodium orthophenylphenate or other phenol derivative which can be found under a variety of trade names. Usually, a preservative is added to the gelatin between the time it is wetted out and the time it is heated to be put into the solution.

TECHNIQUES. Since the gelatin solution should not be overheated, there sometimes arises the problem of putting the softeners into satisfactory solutions at the temperatures which are recommended for gelatin. This problem can easily be overcome by dissolving the softeners in very hot, in fact boiling, water before they are added to the bath. Many softeners do not require dissolving in such hot water, but those which have a tendency to separate or even cause scum may need only to be thoroughly dissolved in boiling water.

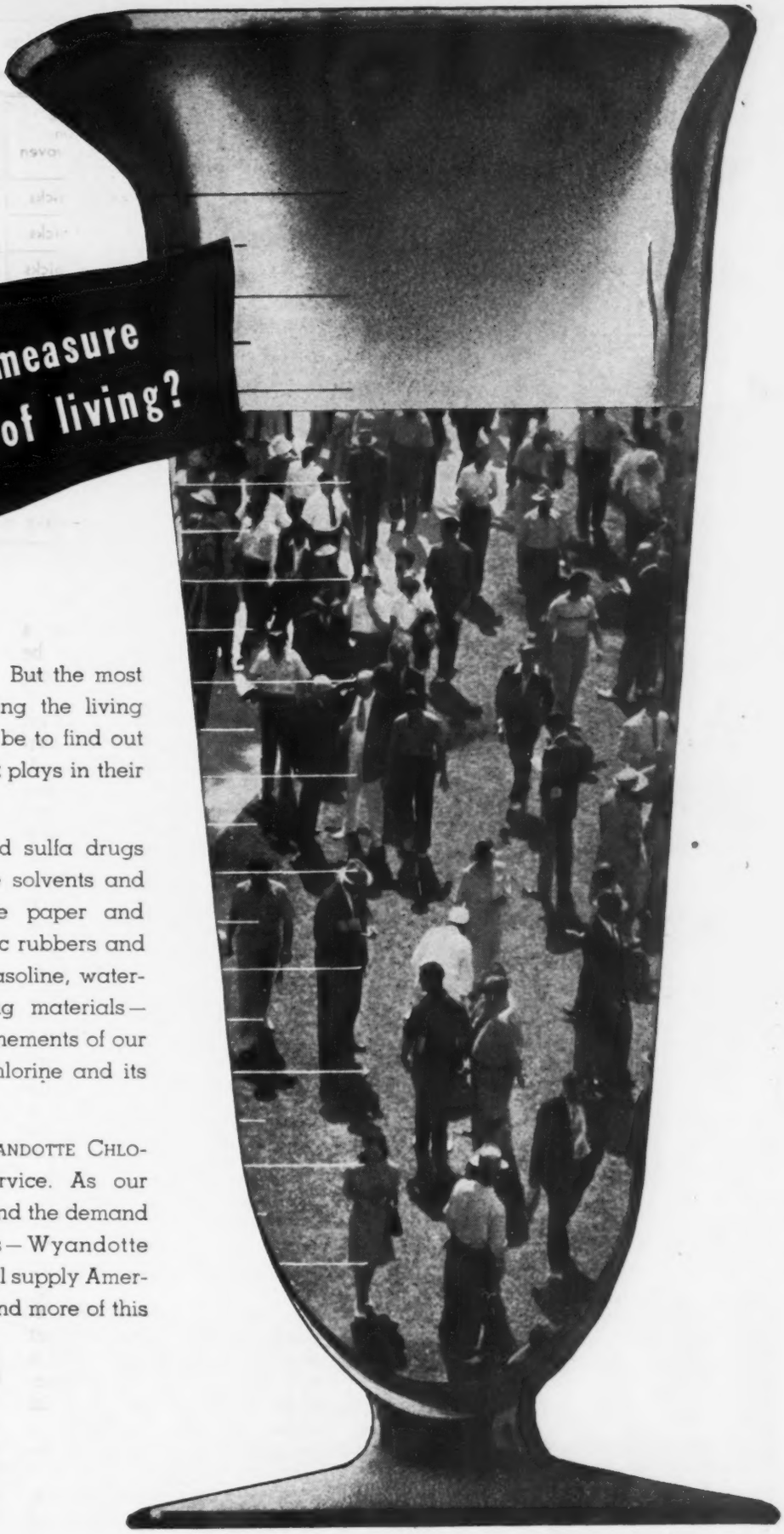
The general practice is to use open steam lines for making up the sizing solution, and there apparently is no serious objection to this if the steam is not wet and does not contain scale, rust, or other foreign material. However, once the solution has been brought up to the proper temperature and volume, the heat applied should be from closed coils or, preferably, a hot-water jacket covering a large area of the storage tank.

In both making up and storing gelatin size solution, the kettles should have within them some means for agitation, such as by slowly revolving panels. In all cases, the gelatin solution should be strained very thoroughly through fine copper mesh or cheesecloth before it is put into the size pan on the slasher.

Temperature controls are quite necessary in conjunction with storing the size solution and for applying it; although in making up the solution, a

(*Continued on page 252*)

How can you measure their standard of living?



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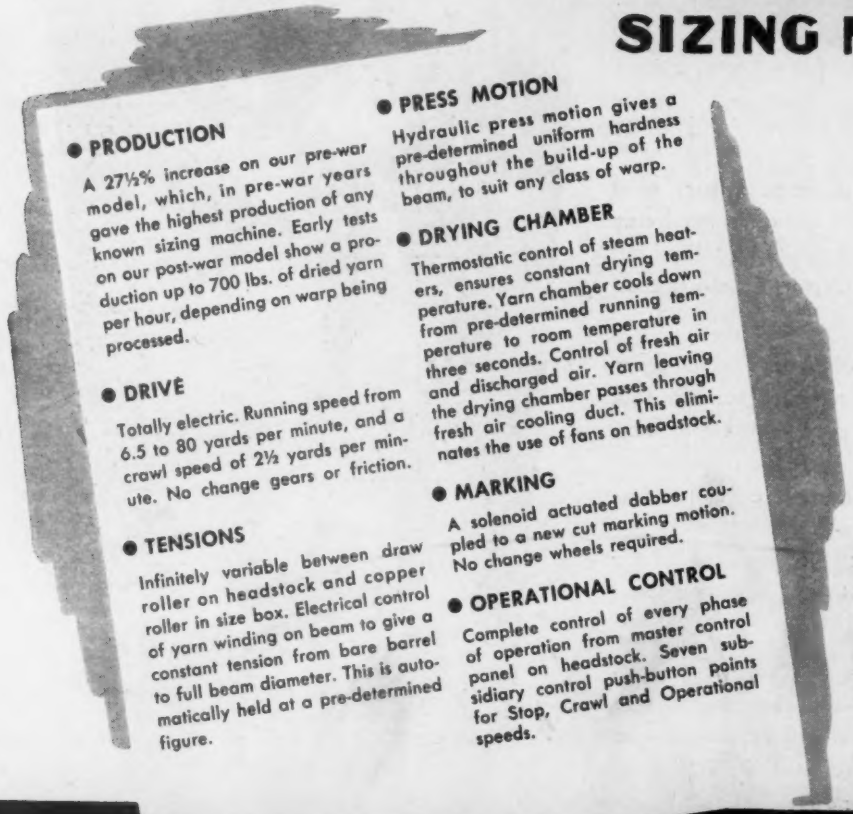

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A 27½% increase on our pre-war model, which, in pre-war years gave the highest production of any known sizing machine. Early tests on our post-war model show a production up to 700 lbs. of dried yarn per hour, depending on warp being processed.

● DRIVE

Totally electric. Running speed from 6.5 to 80 yards per minute, and a crawl speed of 2½ yards per minute. No change gears or friction.

● TENSIONS

Infinitely variable between draw roller on headstock and copper roller in size box. Electrical control of yarn winding on beam to give a constant tension from bare barrel to full beam diameter. This is automatically held at a pre-determined figure.

● PRESS MOTION

Hydraulic press motion gives a pre-determined uniform hardness throughout the build-up of the beam, to suit any class of warp.

● DRYING CHAMBER

Thermostatic control of steam heaters, ensures constant drying temperature. Yarn chamber cools down from pre-determined running temperature to room temperature in three seconds. Control of fresh air and discharged air. Yarn leaving the drying chamber passes through fresh air cooling duct. This eliminates the use of fans on headstock.

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A solenoid actuated dabber coupled to a new cut marking motion. No change wheels required.

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Complete control of every phase of operation from master control panel on headstock. Seven subsidiary control push-button points for Stop, Crawl and Operational speeds.

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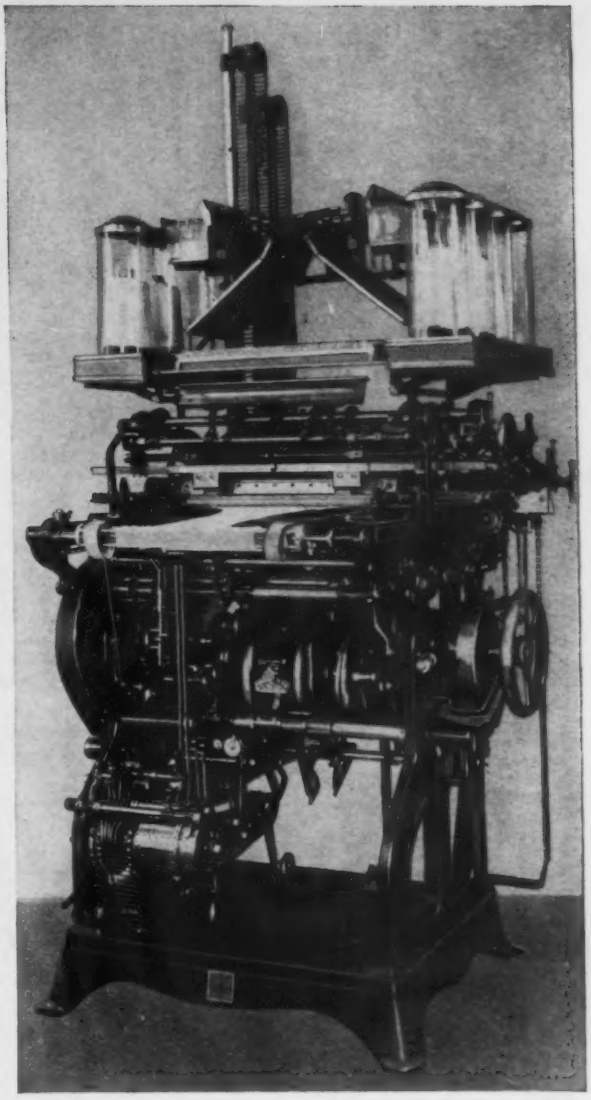
JH/S1/1

STOCKINGS



Smash through your old production ceiling to New Volume Figures 1947 will witness the biggest demand for sheer stockings in history. Is your plant prepared to meet the issue with superior product and greater volume? Here is a Wildman machine that is stepping up production in hosiery mills throughout the country because it

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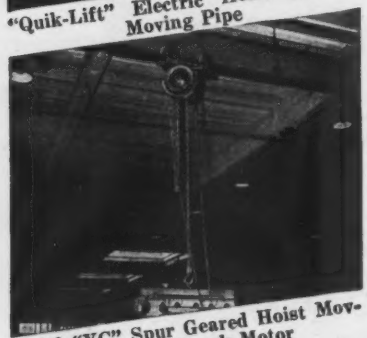

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COFFING HOIST COMPANY
Danville, Illinois, U. S. A.

(Continued from page 248)

simple built-in thermometer is quite satisfactory, since the procedure is quite rapid. However, a control instrument is helpful in making sure that each batch is made up exactly as the previous one. Level controls should be a must for size pans on the slashers.

In the tabulation on page 248 listing slashing formulas, the amounts given have been found to be rather close to the minimum which can be used to give good weaving results. However, it is impossible to predetermine a size formula that will be entirely satisfactory unless conditions under which the yarn is to be woven are known.

Some persons make the mistake of thinking that there is a direct relationship between the gelatin and the softener. Such persons fail to take into consideration the softening effect of the penetrant and the effect of the particular finish which is on the yarn. By actual experience, it has been found that some finishes on acetate yarn actually repel the size solution, thereby causing gum to form on drop-wires and permitting the yarn to be chafed.

Another factor which must be taken into consideration is the filament size of the yarn to be run. Naturally, a yarn with relatively fine filaments must be more thoroughly protected with gelatin, which, on the other hand, must have a larger amount of softener, particularly for such constructions as French crepe. Of course, the conditions in the weave room must also be taken into consideration in any formula. Normally, for example, looms running 135 picks per minute will not require as tough a film on the yarn as will be needed for looms running 172 p.p.m.

The slashing formulas are given merely as a guide but are taken from actual formulas that have been used successfully over a period of years.

Of course, to avoid all the trouble of originating size formulas, there are on the market a number of one-piece products in liquid, powder, or semi-solid form. They are particularly useful in plants which use only a small amount of sizing materials and which do not have the facilities for developing their own formulas. However, even with the one-piece products, it is advisable for the mill to make film and sink tests to determine roughly, at least, the suitability of the one-piece product for the particular yarn to be slashed.

Slasher Solves Problem in Warping MONOFILAMENTS

HIGHLIGHTS: *System to eliminate warp knots affects production of No. 90 filling-winder operators—Caked yarn cause of waste—Knot-free warps possible.*

By ALBERT FRANTZ

Due to interest in the weaving of plastic monofilaments and the inquiries following the articles which appeared under his name last year, Mr. Frantz has written this article to answer questions which have arisen concerning this relatively new textile material.—EDITOR.

DURING EARLY ATTEMPTS to warp heavy-gage monofilaments, bobbins of yarn were placed on a large, rebuilt bobbin creel; and the yarn was run on a horizontal warper, similar to the type used for silk. However, the warper speed had to be reduced for the plastic yarn.

The large revolving bobbins gave some trouble when the yarn was approximately half off the bobbin. During the winding or redrawing process, some of the yarn must have been put on in a damp, or semi-plastic, state; and this condition showed up as caked yarn on the bobbin. Some nearly empty bobbins had to be removed and the yarn wasted, as it was impossible to draw off the caked yarn.

At first, too, many knots were fed through into warps. Bobbins would run out and new ones would be tied onto the run-out. When the knots came up during weaving, they would usually break out and cause defects. The main objection to the knots breaking was loss in loom production. If each loom loses a few yards production more than figured, all profits that may have been gained in other departments will be wiped out. Work on eliminating warp knots resulted in an ideal method of making warps.

The ideal set-up required more than one change. An early change was from one creel to two creels. (The double creel method was described in TEXTILE

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THE STATE OF MISSOURI

In The Heart of America

WORLD, April, 1945, page 123.) This double creel eliminated one warping-machine run, as twice the number of warp ends were placed on the machine as formerly. The elimination cut down the number of working hours, made band matching better, speeded up production in the warping department, and actually cut down the number of knots.

In cutting the number of re-ties, it was necessary to look for spools about to run out near a band cut-off. If a spool indicated it would not last a full-length band, it was removed and a full spool was placed on the creel. When the new band was started, any creeling knots would be drawn through and cut out entirely.

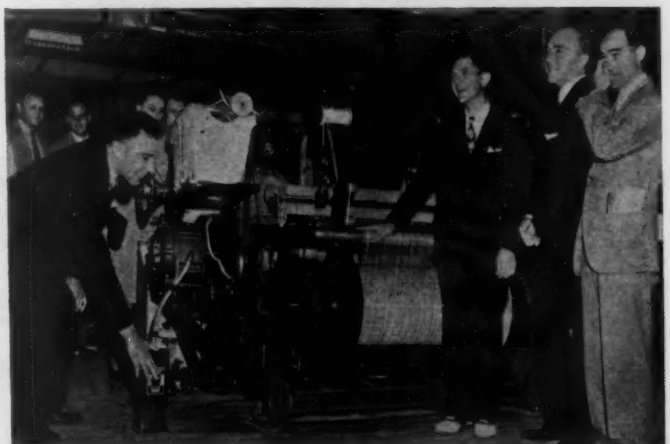
CRUSHING ACTION. For a long time, the crushing action of the yarn made it impossible to build up long warps. If too much yarn was placed on the warper, the paddles would be crushed; if too much yarn was placed on the beam, the barrel would be crushed. If too much tension was placed on the yarn, the upper layer of yarn would cut down through the lower layers and make a clean warp run-out nearly impossible. And the search for longer warps was stimulated by the possibility for increased loom production, as idle loom time for warp remounts was a considerable factor in the cost of weaving this material.

Someone came up with the idea of running the heavy yarns directly through a sizing machine. The eventual method proved how practical this method was. A large V-shaped spool creel was built having the exact number of spools the warp required. No running two or more bands onto a beam—this method required but one band the full width, and required a creel having the end-count of the weave desired.

A reed for obtaining correct width was placed in front of the open V of the creel, and the warp yarn fed through rollers. The sizing box was eliminated, as no size was necessary. Any amount of tension could be placed on the warp beam, but wood-barreled beams had to be replaced with steel beams. Suitable tension was maintained from start of beaming to completion. Then, warps filled to the rims of the flanges were possible.

The spools removed from the creels were sent to the quillers to wind onto shuttle bobbins, if the spools still had yarn on them. Here is where the cost increased, as the bobbin winder had to handle "skinnies" and could not produce many quills. Only a few spindles on a No. 90 Universal winder can be assigned to each operator handling such yarn. But efficiency here was not expected, and no records on standard production were kept. Principal savings came because of the fast, efficient beaming through the sizer, and because of larger, knotless warps in the loom. Some warps, in fact many, actually were entirely knot free.

It would be possible to run the very fine gages of plastic yarn from cones or tubes; but on the heavy yarns, the best method is from large spools.



First loom being started up in the Cornelia, Ga., plant of Chicopee Mfg. Corp., which is reported to be the first in the nation for the exclusive production of plastic-yarn fabrics. W. J. Holman, Jr., general manager of Chicopee's Lumite division, starts up the loom as (l. to r.) Harry H. Purvis, Chicopee vice president in charge of the Cornelia plant; Robert W. Johnson, head of Johnson & Johnson; and G. O. Lienhard, Chicopee president, look on.

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installed on the singers of the mill referred to above, have both doubled the former yardage and ensured "more thorough" drying! Both sides of the cloth are singed simultaneously . . . at a speed up to 500 yards per minute. Since no flame penetrates the goods, there is no scorching—or subsequent weakening of the fabric. The Carbomatic controls permit several widths of material—or heavier or lighter goods—to be processed on the same unit. No need for brushes, cooling coils or rewinding back and forth! Safe, full-automatic operation.

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News of the month

Textile Calendar

Seventeenth National Exposition of Power & Mechanical Engineering, Grand Central Palace, New York, Dec. 2 to 7, 1946.

AATCC, Silver Jubilee Convention, Hotel Statler, Boston, Mass., Dec. 12 to 14, 1946.

National Cotton Council, annual convention, Galveston, Tex., Jan. 27 to 29, 1947.

Seventh International Heating & Ventilating Exposition, Lakeside Hall, Cleveland, Ohio, Jan. 27 to 31, 1947.

ASTM spring meeting, Philadelphia, Feb. 24 to 28, 1947.

Knitting Arts Exhibition, Convention Hall, Atlantic City, N. J., Apr. 29 to May 2, 1947.

National Association of Hosiery Manufacturers, annual meeting, Hotel Claridge, Atlantic City, N. J., Apr. 28, 1947.

Hosiery Industry Conference, Hotel Claridge, Atlantic City, N. J., Apr. 28 and 29, 1947.

Second National Plastic Exposition, Coliseum, Chicago, May 5 to 11, 1947.

ASTM, annual meeting, Atlantic City, N. J., June 16 to 20, 1947.

AATCC Jubilee. Progress in textile chemistry and processing during the last 25 years will be commemorated at the Silver Jubilee Convention of the American Association of Textile Chemists & Colorists to be held Dec. 12 to 14 at Hotel Statler, Boston. Highlights of the meeting will include a technical session on fundamental and applied research, an intersectional prize-paper contest, an open meeting of the research committee, a dinner for charter and corporate members, and the annual banquet. Another feature of the convention will be exhibits portraying recent advances in textile processing. During the meeting, a personnel service will be operated for the purpose of introducing members of the association to prospective employees. A group luncheon of textile-school alumni will be held at noon on Dec. 14.

A Goodwill Radio Program. American Cotton Manufacturers Association began a new series of radio programs on Sunday, Oct. 27, over a network of five southern radio stations. The program, to be known as "Our Community," will be sponsored by ACMA in cooperation with the various state textile associations, and will be presented each Sunday from 8:30 until 9:00 a.m., EST, over stations in Charlotte, Spartanburg, Greenville, Atlanta, and Birmingham. "We hope by means of this program," said Dr. W. P. Jacobs, president of ACMA, "to show some of the friendly human relationships that exist in industrial communities." It is not intended either to defend or to advertise the industry.

Silk Sale Drags. The second offering of Jap raw silk at open auction in mid-October was listless, and prices which hovered near upset levels were described as about 75¢ per lb. less than the September sale. Sales of 13/15 AA white ranged from $9.05 to $10.40, and of 20/22 AAA SP 95% ranged from $10.35 to $10.75. Of 5,608 bales offered, 4,279 were sold; thus nearly 24% failed to bring upset prices.

CCC Advances Wool. An upward adjustment in the selling price of wool owned by the Commodity Credit Corp. to bring the price in line with parity became effective Oct. 14. It averages 1¼¢ per lb., grease basis, with variations depending on grade and staple. The adjustment in the selling price of CCC-owned wool is the first increase since prices were reduced in November, 1945, to encourage consumption of such wool by domestic mills. Additional reductions were made in February and August, 1946; total reduction averaged 8¢ per lb.

Seek 1947 Maid of Cotton. Search for the cotton industry's 1947 Maid of Cotton has begun. The National Cotton Council last month announced qualifications for the contest which will terminate with the selection of a Maid and two alternates in Memphis next Jan. 13. The girl named as 1947 Maid of Cotton, as has been customary, will make a nationwide tour as goodwill and fashion ambassador of the cotton industry. The five-month tour is scheduled to open in Miami early in February and will be extended to cover leading cities on the West Coast. Any girl who is a native of one of the cotton-producing states, who is between the ages of 18 and 25, and who has never been married, is eligible to participate in the contest. Entries close Dec. 20.

A New Fiber. What is described as an entirely new fiber is now under development in the laboratory of Imperial Chemical Industries, London, England. The fiber is a polyester derived essentially from terephthalic

Here is the final "Scott Tester Data Sheet." Request any others you need to complete your Set of 8

MAINTENANCE DATA SHEET NO. 8

CALIBRATION - INCLINE - PLANE

To check calibration of the IP-4 machine, weigh the carriage complete with all attachments (clamp, pen and weights for range to be checked). Carriage should weigh exactly twice the effective capacity (i.e. a 10-lb. cap. carriage should weigh 20 lbs.). On the IP-2, a 250-gram capacity carriage, complete with attachments, should weigh 591.51 grams—other capacities in same proportion. (A carriage weight should weigh an amount equal to the required capacity divided by the sine of the angle of maximum inclination.)

After determining that carriage weight is correct, see that rims of wheels and tracks are smooth and free of all dirt, rust, etc. Place carriage on track midway of its run. Adjust pen to rest in O horizontal on the chart. Then start the plane inclining. The line drawn will start vertical —indicating combined starting friction and inertia—but should move away from the vertical within the first two small spaces in the chart to indicate a satisfactory calibration.

If it does not, proceed as follows:

1. See that pen point is in good mechanical condition and sliding freely.
2. With commercial solvent and soft rag clean foreign materials from wheels and track.
3. Check tracking of wheels.
4. Remove wheels and wash ball bearings; repack per instructions.
5. Plain-bearing Wheels: Check condition of pivots, and indentation in axle and point in frame.
6. In replacing either type bearing, take care not to restrict rotation of wheel.
7. Check track alignment; tracks must be parallel and in same plane.

The many Scott Testers supply the needs of testing textiles, rubber, wire, paper, etc., up to 1 ton tensile.

REQUEST "CATALOG & DATA BOOK NO. 45"

SCOTT TESTERS, INC.

95 BLACKSTONE ST., PROVIDENCE, R. I.

Greenville and Northern Railway Company

Plans for industrial plant location should include investigation of the territory served by the Greenville and Northern Railway, which territory is a densely populated, rural community from which comes the highest class of industrial help in the South.

"Good Neighbors" are assured, as the plants of the manufacturing concerns listed below are served exclusively by the Greenville and Northern Railway:

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(Textile Bleaching and Finishing)

SLATER MANUFACTURING COMPANY
(Rayon, Satins and Taffetas)

FIBRE PROCESSING COMPANY
(Cotton, Rayon and Wool waste)

UNIVERSAL ZONOLITE INSULATION COMPANY
(Mining and manufacturing vermiculite insulation material)

GEORGIA HARDWOOD LUMBER COMPANY
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STANDARD OIL COMPANY OF NEW JERSEY
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Attractive booklet containing a survey of sites and describing the many unique advantages and opportunities available, including water supply, electricity, sewage, and waste disposal, etc., will be sent upon request.

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acid and ethylene glycol and is at present known as Terylene. It is the result of research initiated by the Calico Printers Association and carried out by J. R. Whinfield, assisted by Dr. J. T. Dickson and others. The fiber may be produced in a wide range of characteristics depending on its treatment. It is said to have high resistance to light and to heat and to possess a high initial elastic modulus. The British I.C.I. has exclusive license covering the world outside of the U.S.A.

A Textile Machinery Show for New York. A national exposition of textile machinery and supplies is planned to be held in Grand Central Palace, New York, late in 1947, according to announcement by Arthur Tarshis, president of Exhibitions of Fashions, Inc., New York. Displays are planned to include the machinery and supplies that enter into the weaving, knitting, dyeing and finishing, and manufacture of all textiles. New York is particularly suitable for such a show, Mr. Tarshis states, because of the great interest at present among foreign countries in American textile machinery. In the past, there have been textile machinery shows in Boston, Philadelphia, and Greenville, but this is the first planned for New York. Exhibitions of Fashions, Inc., is presently engaged in launching an international exposition of textiles, trimmings, and factory equipment at Grand Central Palace the first week of June of next year.

Gastonia Centennial. Tribute to the invaluable contribution of labor to Gaston County's growth in its 100-year history highlighted the Gaston County Centennial Celebration Oct. 6 to 12. Oldest worker qualifying was Jesse Huffstetler, employee of Superior Yarn Mills at Mount Holly, who has a continuous record of 60 years employment with the same management. Mr. Huffstetler has missed only one working day during his six-decade work career. Dave Kelly, 84 years old, of Dalnoca Mills, Dallas, has worked in Gaston County mills for 75 years, but not all for the same concern.

Australian Wool Strong. Of the total average annual Australian wool clip of 900,000,000 grease pounds, about 500,000,000 lb. represents grades of 60/64s to 70s and finer. There is said to be little, if any, of these fine wools in the Australian stockpile of 1,968,000,000 lb. Not only American but world requirements for fine grades must be met largely from the current clip, a fact largely responsible for the continuing advances in prices at the present auctions.

New England Offers Scholarships. The New England Textile Foundation will award up to 40 scholarships in the four textile schools in New England for the academic year 1947-48. Any graduate of a preparatory or high school, 21 years of age or under on July 1, 1947, is eligible to compete if recommended by his, or her, high school principal. The value of the scholarship is $500 which is sufficient to cover tuition and part of living expenses for the first year. Additional scholarships will be available for the same students in succeeding years, providing their standing is sufficiently high. The four schools accepting students who win scholarships are: Bradford Durfee Technical Institute, Fall River, Mass.; Lowell Textile Institute, Lowell, Mass.; New Bedford Textile Institute, New Bedford, Mass.; Textile School of Rhode Island School of Design, Providence, R. I. These scholarships are made possible through the contributions of various New England textile mills to the foundation. Interested students

NEWS FOR DOODLERS—Luncheon cloths immune to jam, gravy, and ink stains are possible by treatment developed by Monsanto Chemical Co.'s Plastics Division, Springfield, Mass. Although protected by a super-thin layer of transparent vinyl-butyral plastic, the cloths have the feel and appearance of an untreated fabric. Left, a doodler goes to work; center, he starts erasure with a damp napkin; and right, he starts over with a "clean slate." This finish also has a field in furniture slipcovers and draperies.

hosiery finished with Dura Beau
Reg. U. S. A. and Canada
gives added charm, grace, loveliness—

Through four decades, the use of *DuraBeau* Finishes has enabled women of discriminating taste to be assured of fine hosiery that is exquisite and very serviceable as well.

Over this span of years, extensive experimentation and constant research have improved *DuraBeau*, and raised it to an even higher place of esteem among those who make, sell, and buy hosiery.

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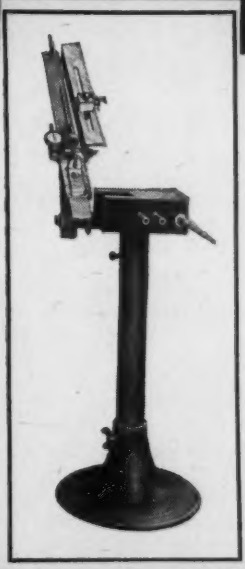
PRECISION
OVERHAULING



Portable spindle straightening machine which can be used in the mill.

The trend in recent years toward more efficient operation of textile mills has resulted in the development of many unique devices and methods designed to increase production. An outstanding example is the Guillet Overhauling System used for lining, leveling, and conditioning frames. This system has now been applied in over 500 mills and has become an important influence in this trend toward precision.

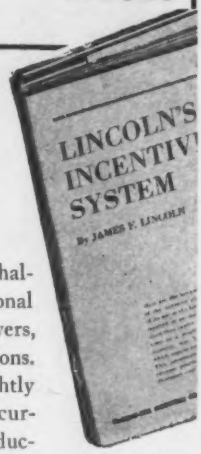
There are certain types of textile machinery which cannot be easily reconditioned in the mill due to the complicated and heavy machinery necessary for the work. Work of this nature should be done in our shop, such as repairs to Flyers and Rolls.

DIXIE SPINDLE & FLYER COMPANY, Inc.

CHARLOTTE — ALBERT M. GUILLET, PRES. — NORTH CAROLINA

How to pay higher wages

WITHOUT RAISING PRICES



The tested answer to industry's top problem today . . .

Mr. Lincoln "challenges the traditional thinking of employers, workers, and unions. He faces forthrightly the problem of securing increased productivity and translating it into higher rewards for the worker and lower prices to the customer. This book warrants close reading."

—*says* **Elinore Herrick,** Former Regional Director, National Labor Relations Board, and, during the war, Director of Personnel and Labor Relations in the Todd Shipyards. *New York Herald Tribune Book Review.*

LINCOLN'S INCENTIVE SYSTEM

By JAMES F. LINCOLN

President of the Lincoln Electric Company, Cleveland, Ohio

192 pages, 5½ x 8½, $2.00

"It chronicles an extraordinary achievement . . . Lincoln's incentive system has demonstrated that increases in man-hour productivity have no limits under proper management and with understanding worker cooperation."—*Book-of-the-Month Club News.*

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Providence 3, R. I. George T. Metcalf is executive secretary.

Textron Is Training Salesmen. With a student body of 22 young men drawn from throughout the country, Textron, Inc., has inaugurated a sales training school that provides an extremely thorough course in textile selling and will keep Textron supplied with the high-caliber salesmen who will be needed in the days ahead. The program has been set up by James A. King, Textron's vice president in charge of sales. The courses are being given at the Hotel Woodstock, New York City.

Design Contest at Greensboro. Purchase awards in the various divisions of the third annual International Textile Exhibition, sponsored by the art department of the Woman's College of the University of North Carolina, Greensboro, N. C., include the following: Woven linens, no first prize, second to Mrs. Donnell B. Young, Bethesda, Md.; woven draperies and upholsteries, first to Elsie Regensteiner, Chicago, Ill.; clothing fabrics, first and fourth to Robert D. Sailors, Bloomfield Hills, Mich.; woven rugs, first to May Kedney, of Oneonta, N. Y.; printed textiles, first and fourth to Merlin G. Dow, of Eugene, Ore.; woven synthetics, first to Henriette Atkin, Hendersonville, N. C.

Canadian Textile Capacity Increased. Canada can produce more wool cloth, hosiery, and knitted garments than Canadians consumed from all sources in prewar years, H. G. Watson, president of the Canadian Woolen & Knit Goods Manufacturers Associations, stated in an address at the annual meeting of the association. He added that the industry needs 3,000 more workers further to increase and diversify its production.

20th Anniversary. The Reliable Textile Co., Inc., New York, celebrated "20 years of Reltex Fabrics" on Oct. 15. The two decades marking the association of Irving Roaman and George Tarshes as partners is virtually a history of the rayon industry itself. They were among the pioneers to see the possibilities of synthetic fabrics for high-style and better-quality garments.

Times Style Show Dramatizes Release. As though prophetic of release from L-85 restrictions, the Fifth Edition of "Fashions of The Times" projected a panoramic preview of fashions—fluid, feminine, and elegant. Produced in the guise of a musical comedy, resort and spring 1947 fashions were shown for five days in the theater owned by the New York Times, matinees and evenings, through two acts and ten scenes of a production dramatizing a total of 150 costumes. The program listed some 30 or more mills and converters which were the sources of the fabrics used.

***GOTHAM HOSIERY CO.** is now offering what it describes as the sheerest stockings ever made, a 15-den. nylon with new sandal foot. To complement the return of gold and bronze evening sandals, the stockings come in metallic colors, gold, copper, and bronze verde.*

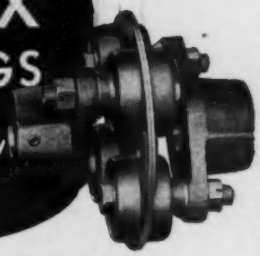
Materials Handling. The first exposition to deal entirely with industry's materials-handling problem will be held at the Public Auditorium, Cleveland, Ohio, Jan. 14 to 17, 1947. Earl I. Burke, Republic Steel Co., is chairman of the policy committee of the exposition.

Carpet Season Set. The official 1947 opening of the carpet and rug industry in New York has been set for Jan. 6, 1947, according to King Hoagland, secretary-treasurer, Institute of Carpet Manufacturers of America, Inc. This date corresponds with the opening of the winter market to be held in Chicago.

Textile Plants in Australia. According to a report from Australia, the following are among the American and Canadian firms which have set up plants there: Burlington Mills Pty., Ltd., rayon and cotton fabrics, 1,500 employees; Bruck Silk Mills, Ltd., weaving and printing of rayon piece goods, 2,000 employees; Firestone Tire & Rubber Co., rubber products, 1,200 employees; Julius Kayser & Co., hosiery. It is reported that Bruck Silk Mills in addition to its textile activities will set up what will be Australia's first aluminum ingot plant which will have an ultimate payroll of 5,000.

Give them a
"white glove inspection"

MORFLEX COUPLINGS *stay clean*



Where cleanliness is essential, Morflex couplings are the answer. Require absolutely no lubrication—no oil or grease to throw off and soil or contaminate products. Specially designed rubber trunnion biscuits absorb shock, isolate vibration, smooth operation. Sizes from 2" to 12" diameter, for various capacities.

MORSE CHAIN CO. • Detroit 8, Mich. • Ithaca, N.Y.

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MORSE COUPLINGS and DRIVE SHAFTS

DAVIS AND FURBER

Earn a Manufacturing Profit By Using the Best Machinery and Supplies

DUSTERS
PICKERS
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FROM THE CATALOG OF BARRETT BASIC CHEMICALS

CYCLOHEXANOL
a clear water-white liquid

Empirical Formula	$C_6H_{11}OH$
Molecular weight	100.15
Boiling point	160.7° C
Color, Hazen	20 Maximum
Refractive Index @ 25° C	1.463—1.465
Effect on metals	Non-corrosive
Residue from evaporation	None
Pounds per gallon	7.9
Evaporation rate @ 450° C (Jolly Balance)	0.4 milligrams per minute per square centimeter (approx).

FOR THE TEXTILE INDUSTRY

Cyclohexanol distills without decomposition, and is miscible in all proportions with most aliphatic, aromatic hydrogenated and chlorinated solvents. It forms a clear solution when added to textile soaps and detergents, and these solutions possess excellent solvent or emulsifying powers for fats, mineral oils, or waxes. They have proven themselves to be especially good for the washing of wool, and are considered efficient stain removers for all textiles.

Other Barrett basic chemicals for the textile industry include:

BENZOL
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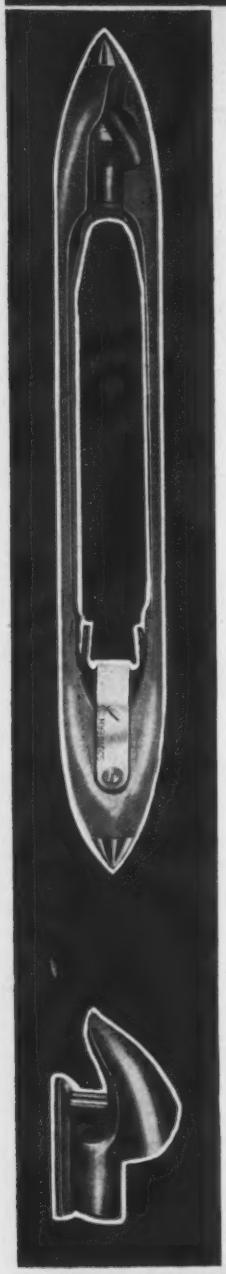
ONE OF AMERICA'S GREAT BASIC BUSINESSES

For maximum efficiency
on the newest
High Speed Looms



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1. Made of Southern's exclusive Tempered Dogwood, it assures you longer service in loom hours.

2. The patented series of No. 54 Eyes with the integral scroll of precision workmanship has constantly out-performed all competitive makes.

3. Introducing a shuttle spring or grip that has been custom-built at extra cost to assure you of trouble-free performance.

With pride we offer Southern Shuttles for your most exacting and critical weaving conditions in high speed looms.

At your request our Engineer will call and demonstrate these features.

SOUTHERN SHUTTLES DIVISION
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STEEL HEDDLE MFG. CO.
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NEWS ABOUT *Suppliers*

Draper Corp., Hopedale, Mass., received CPA approval on Oct. 16 for building construction costing $113,450 at its Spartanburg, S. C., plant.

Solvay Process Co. has CPA approval for erection of a $460,000 soda-ash plant at Detroit, Mich.

Wyandotte Chemical Co., Wyandotte, Mich., has received CPA approval for erection of a $459,000 soda-ash plant at Wyandotte.

Bakelite Corp., New York, has received CPA approval for building a $1,950,000 plant for manufacture of vinylite at Ottawa, Ill.

Saco-Lowell Shops, Biddeford, Me., has been awarded the Safety Flag by Liberty Mutual Insurance Co. for completing a year of plant operation with an outstanding accident-prevention record. Presentation was made to Walter M. Whitney, Saco-Lowell safety director. The award was based on a lost-time accident figure which was 68% better than the national average for the industry for the period July 1, 1945, to July 1, 1946.

H. H. Frede Co., Chattanooga, Tenn.—George M. Schroder, a research Fellow of the Industrial Research Institute of University of Chattanooga, has joined the staff of this company to direct research on the process for bonding cotton fibers which was developed under his direction at the Industrial Research Institute.

Pawtucket Mill Supply Co., Pawtucket, R. I., has moved to its new building at 240 York Ave., Pawtucket, where increased facilities are available.

McKelvie Machine Co., Gastonia, N. C., suffered damage Oct. 4 in a fire with loss reported in excess of $100,000.

Borne Scrymser Co., Elizabeth, N. J., and Charlotte, N. C., has reemployed Maj. Willard E. (Wes) Smith after 4½ years with the Chemical Warfare Service. Prior to entering the service, he was engaged in research and development on fiber conditioners and tinting compounds, including the new Minotints which have just been released. He will work in the South Carolina territory under Russell C. Young, Southern manager, Charlotte, N. C., but will be available throughout the South for special services.

Dexter Chemical Corp., New York, has appointed M. Leonard Slesinger to represent its Textile Chemical Division in the two Carolinas. He graduated from the North Carolina State College, having majored in textile chemistry and

***TOMPKINS 100th YEAR**—Tompkins Bros. Co. employees and friends recently celebrated the 100th year of building spring- and latch-needle knitting machines, with an informal dinner dance in Syracuse, N. Y. The dinner was presided over by W. A. Ingalls, owner, with his son-in-law, Eugene Craig, factory manager. Presentations were made to 25-year employees—Mrs. Charles Kellerhouse, Nick Troiano, George Conlin, Alex Hansen, Monroe Schulz, and William Goering, shown seated at the head table. Original company was founded by Clark Tompkins, of Troy, N. Y., and moved to Syracuse in 1916 shortly after Mr. Ingalls secured an interest.*

Style 27

LANE BASKET TRUCKS

Smooth - Light - Durable

Designed for
All Textile, Garment, and
Many Other Industrial Plants

W. T. Lane & Bros., Inc.

Mfrs.

Poughkeepsie, N. Y.

TIME-TESTED TIPS FOR MILL MAINTENANCE MEN

Here's Paid up Insurance Against Indoor Rust!

Your replacement parts represent a sizeable investment. So why not give them protection against damaging rust? It's easy: Simply dip parts in Oakite Special Protective Oil. Surfaces quickly take on a thin transparent coating that effectively safeguards parts against indoor rust.

Protection from the Start!

It's always good preventive maintenance to rust-proof wet parts with Oakite Special Protective Oil after cleaning. No pre-drying is necessary, because Oakite Special Protective Oil disperses moisture . . . completely blocks it out. Helpful tips on rust-proofing *after* machining, grinding and other repair operations—yours FREE. Send for 16-page Oakite booklet NOW!

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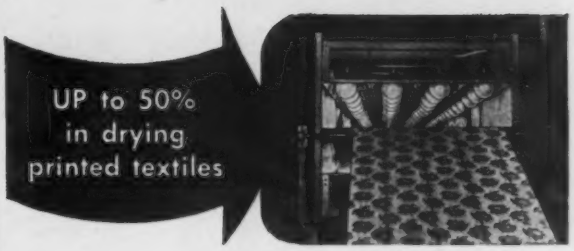
Technical Service Representatives Conveniently Located in All Principal Cities of the United States and Canada

OAKITE *Specialized* CLEANING
MATERIALS · METHODS · SERVICE · FOR EVERY CLEANING REQUIREMENT

Production Boosted



Photos courtesy Fostoria Pressed Steel Corporation, Manufacturers of Infra-Red Equipment

Typical results with *INFRA-RED*

In application after application in the textile industry—*wherever* drying, preheating or evaporation is involved—Infra-Red is scoring outstanding production gains.

Output is boosted, costs reduced, or rejects cut down in preshrinking cloth; drying rayons, cellulose acetate, printed fabrics; removing salt solution from duck.

FOR BEST RESULTS WITH INFRA-RED

come to the company that's first in the field of Infra-Red Lamps. Wabash developed the special lamp filament that provides *uniform* distribution of radiant energy—at the best wave lengths for the purpose. Wabash locks every lamp with the famous "Superlok" base that even terrific temperatures cannot loosen.

And Wabash is ready to help you engineer each job. *Wabash Corporation, 345 Carroll Street, Brooklyn 31, New York.*

WABASH
FIRST IN INFRA-RED
SYLVANIA ELECTRIC

Wabash Corporation, a subsidiary of Sylvania Electric Products Inc.

PARKS
Traveling Cleaners
have such fixed habits

Every so often they give spinning frames (spoolers, warpers, winders, too) a mild fanning. Lint is shooed away before it has a chance to bunch.

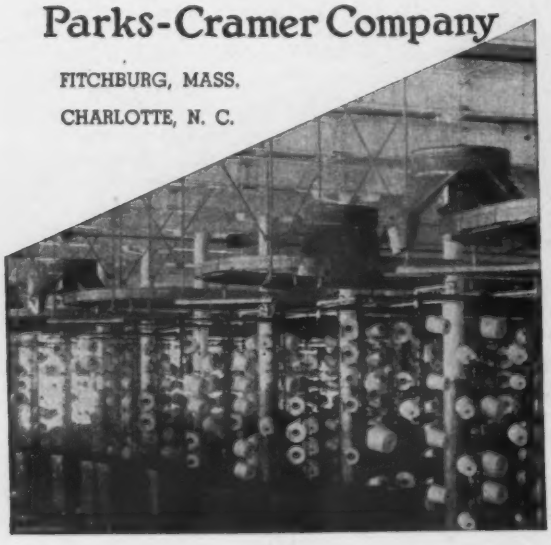
Improves Quality	Improves Quantity
Cleaner Yarn	Fewer Ends Down
Smoother Yarn	Fewer Stops
Fewer Piecings	Fewer Pickouts
Fewer Seconds	Fewer Cutouts

Lessens waste; waste of material, waste of time. Better working conditions. More is accomplished with less effort.

Not a bad investment.

Parks-Cramer Company

FITCHBURG, MASS.
CHARLOTTE, N. C.



dyeing. Before the war, he was on the research staff of North American Rayon Corp., and, since leaving the army, he has been with United Merchants Sales Corp.

Calco Chemical Division, American Cyanamid Co., Bound Brook, N. J., appointed George A. Jonic as a sales representative in the metropolitan district sales department, calling upon the textile trade in the Paterson-Passaic territory. The Pigment Department of Calco has appointed John B. Fried as a metropolitan New York district sales representative.

Pennsylvania Salt Mfg. Co., Philadelphia, has transferred Louis M. Kuilema, formerly district sales manager at its Cincinnati office, to take charge of the Wisconsin territory with headquarters at 20 N. Wacker Drive, Chicago. Charles W. Dermitt has been moved to Cincinnati as Mr. Kuilema's successor. Joseph H. Fulmer, formerly connected with the Ethyl Corp., and Sharples Chemicals, has joined the Engineering Department of Pennsylvania Salt.

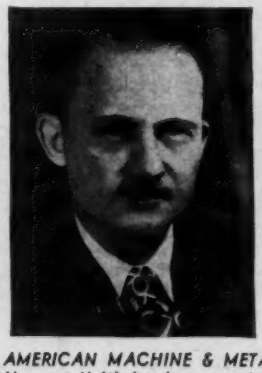
Dayton Rubber Mfg. Co., Dayton, Ohio, has appointed M. H. Clarke as vice president and director of manufacturing. Prior to joining Dayton Rubber, Mr. Clarke was president of the Lake Shore Tire & Rubber Co., Des Moines, Iowa.

Pittsburgh Plate Glass Co., Pittsburgh, has purchased the Morck Brush Mfg. Co., San Francisco. The San Francisco unit will continue operation as the Morck Brush Division of Pittsburgh Plate Glass Co. Frank F. Tippett, formerly associated with the Pittsburgh's Baltimore brush plant, will manage the newly-acquired factory. Another plant to manufacture brush handles is operated by the Brush Division at Keene, N. H.

GEORGE W. VON HOFE, president, New Jersey Machine Corp., Hoboken, N. J., has been elected president of the Packaging Machinery Manufacturers Institute, at the 14th annual meeting of the institute, at Shawnee Country Club, Shawnee-on-Delaware, Pa. Vice presidents elected were Boyd H. Redner, general manager, Battle Creek Bread Wrapping Machine Co., Battle Creek, Mich., and Oscar W. Wikstrom, president, United States Automatic Box Machinery Co., Boston, Mass.

Brown Instrument Co., Philadelphia, has added a group of 45 new sales and service engineers to its expanded field staff. All of the men are now attending the Brown company school of instrumentation at Philadelphia.

Morningstar, Nicol, Inc., plans improvement of two 6-story buildings recently purchased at 622 to 630 West 51st St., New York. The property is now occupied by a subsidiary, Paisley Products, Inc., which requires additional room. The offices and laboratories are being enlarged and modernized. Air conditioning and improved inter-office and inter-plant communications are being installed. New equipment will give the



AMERICAN MACHINE & METALS, INC., East Moline, Ill.—R. M. Hammes (left) has been appointed as assistant to the general sales manager in charge of advertising and sales promotion for the following divisions of the company: Troy Laundry Machinery, DeBothezat Fans, Riehle Testing Machines, and Tolhurst Centrifugals. He was recently sales promotion manager. D. A. Colvin (right) has been appointed advertising manager, succeeding R. W. Denman, who has resigned to go into business for himself.

WHEN IS ONE MULE 13 TIMES Better?

WHEN IT'S A JOHNSON AND BASSETT MULE, WHICH HAS 13 ADVANTAGES OVER RING SPINNING FRAMES AS FOLLOWS: **1.** Up to 50% saving in labor. **2.** Up to 65% saving in H.P. per equal number of spindles. **3.** Up to 50% saving in floor space per equal number of spindles. **4.** Up to 67% saving in investment per comparable capacity. **5.** The J & B Mule will handle a much coarser roving than a frame, thereby increasing production at the card by 15% to 20%. **6.** The J & B Mule produces a true woolen yarn – superior in strength, elasticity, loftiness, roundness and uniformity of size and twist to that produced by frame spinning. **7.** It permits inspection of the thread. **8.** It will successfully spin short staple roving which will not hold together on a frame. **9.** Spindle for spindle, it will produce as much yarn as a frame. **10.** Its cost of upkeep is exceptionally low. **11.** The J & B filling package does not require rewinding for an automatic loom. **12.** Changes for spinning different types of yarn on the J & B Mule are easily and quickly made. **13.** Mule bobbins cost less than frame bobbins.

Complete details and prices on request.

JOHNSON & BASSETT, INC.
Founded 1865
WORCESTER, MASSACHUSETTS, U. S. A.

The FLEX V TRADE-MARK Belt Fastener for A and B Belts of open end construction

Size No. A180 for A Belts
Size No. B214 for B Belts

Flex V fasteners are made in two sizes for joining A and B V-belts of special open-end cross-woven fabric construction and on drives rated as light duty with a belt speed of not over 3000 feet per minute. The fasteners must not be used on heavy duty or high speed drives or for joining or repairing V-belts that were originally endless.

Flex V fasteners are easy to apply with the special applicator tool. The separable hinge joint makes for quick replacement of V-belts without dismantling shafting or machinery. Flex V fastened V-belts can also be run on V Flat Drives for there is no metal on the under side of the belt to contact the flat faced pulley.

Folder No. V-12 gives complete details on this Flex V fastener with list prices, special tools and application information. Your request will bring a copy.

Order from your supply house

FLEXIBLE STEEL LACING CO.
4630 LEXINGTON ST., CHICAGO 44, ILLINOIS

Also sole manufacturers of Alligator Steel Belt Lacing for flat transmission belts, Alligator V-belt Fasteners for V-belts and Flexco HD Belt Fasteners and Rip Plates for fastening and repairing conveyor belts.

Stored greige goods . . .

always ready for Sanforizing when treated with

Twitchell Oil 3X

In selecting a rewetting agent another point looms almost as important as the speed of wetting back. This is stability, the ability not only to resist staining and yellowing, but to retain rewetting properties indefinitely.

Check Emery's Improved Twitchell Oil 3X for:

1. Uniform and rapid rewetting which promotes a high yardage output on Sanforizing machine.
2. Retention of rewet properties of fabrics stored after finishing and prior to Sanforizing—No oxidation or staining.
3. General increase in efficiency because Twitchell Oil 3X is anhydrous, contains no volatile ingredients; imparts lubricity to fabrics reducing friction of Sanforizing shoes; causes no tackiness on shoes or gumminess in or deterioration of the Palmer blanket.
4. Compatibility with starches and other ingredients of regular finishing formulae. Used in warp sizes, Oil 3X adds pliability and rewetting properties . . . Fabrics can be Sanforized direct from looms.

SPOTTING

It's as simple as that—spotting with Twitchell—Scour N-100 and an oil can means process stains remove easily in regular scouring.

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TWITCHELL OILS FOR PROCESSING TEXTILES

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When you use Trust Company of Georgia Factoring Service, your credit and collection worries are completely eliminated. A textile manufacturer who last year did a volume of $175,000,000 said: "Why should I devote my time to credit and collection worries when factoring costs so little?" Savings on credit and bookkeeping expense pay the cost of factoring.

Let us tell you more about this modern service that is helping hundreds of Southern firms to make better progress and profits.

FACTORING DIVISION

TRUST COMPANY OF GEORGIA

ATLANTA, GEORGIA

Next door to every mill in the South

NEWS ABOUT SUPPLIERS

Paisley adhesive plant an additional capacity of 1,000,000 lb. per month above present production.

Liquid Conditioning Corp., New York, has appointed the following engineering sales representatives: John B. Foley, Syracuse, N. Y.; Arthur W. Schuster, Rochester, N. Y.; Brookman-Hazel Associates, Buffalo, N. Y.; Herr-Harris Co., Pittsburgh, Pa.; P. O. Stribling, Jr., Greensboro, N. C.; and The Dorner Co., Milwaukee, Wis.

Strong Cobb Division, of Standard Brands, Inc., New York, has promoted Fuller D. Baird to sales promotion manager. He was formerly sales service manager of the Agricultural Department.

The C. M. Kemp Mfg. Co., Baltimore, has promoted Frank J. Kohut to the post of general manager. Formerly sales manager and chief of development, he will now supervise production, engineering, and other internal functions, along with the external.

E. I. du Pont de Nemours & Co., Wilmington, Del., has opened a new sales office for the Organic Chemicals Department at 1206 Spring St., Atlanta, Ga. The department handles the dyestuffs, fine chemicals, rubber chemicals, and petroleum divisions. The Charlotte office will concentrate on North and South Carolina, while the rest of the Southern district east of Arizona will be handled from Atlanta. D. C. Newman, who has been manager of the Charlotte office, will continue as sales manager in charge of the entire southern district with headquarters in Charlotte. A. B. Owens, formerly sales development manager of the Dyestuffs Division in Wilmington, will be manager of the Atlanta office. R. D. Sloan, connected with Charlotte office for many years, will be manager there. The nylon research laboratory at Du Pont's experimental station in Wilmington, was dedicated recently as "The Carothers Research Laboratory" in honor of the late Wallace Hume Carothers who headed the team of scientists that first synthesized nylon. Du Pont plans to enlarge its synthetic detergent plant at Deepwater, N. J., and CPA has approved approximately $600,000 of new construction. Du Pont also plans construction of a new unit on its electro-chemical plant site at Niagara Falls, N. Y., for the production of one of the main chemical intermediates used in the manufacture of nylon. The project is estimated to cost about $3,000,000.

Gardner-Denver Co., Chicago, has appointed G. V. Leece, vice president of the company, to the post of general sales manager. Mr. Leece joined Gardner-Denver in 1922 and has lately been in charge of the export division with offices in New York. He will hereafter be located in the company's plant at Quincy, Ill. Gardner-Denver has promoted B. P. Spann, formerly advertising manager of the company, to personnel and industrial relations director. He is succeeded as advertising manager of D. P. Tunnicliff.

Amco Chemical Corp., Newark, N. J., has merged its interests with the Havey Bros. Co., Kingston, Pa. C. Russell Havey has been made vice president in charge of sales. The Havey brothers are sons of the late J. Edward Havey, who was general manager of Saquoit Silk Mills. Frank Alberte is president of the corporation, which plans an expanded program in the textile field, including products for throwing, knitting, weaving, and dyeing.

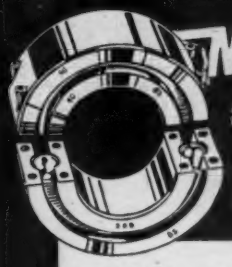
PROGRESSIVE BLANKET SELLING—Sales representative of North Star Woolen Mill Co., Minneapolis, are being supplied by their company with brand new Ford station wagons for use in travelling their territories. In the picture, Harold J. Leydon, vice president and general sales manager, is shown with the fleet of 16 cars now being delivered by the various branches of the Ford Motor Co.

GRID High Test Cast Iron Unit Heaters are engineered especially to overcome atmospheric conditions ever present in textile mills. Many have been in use for 16 years without maintenance expense, and here's why: One piece construction heating sections (patented) of high test cast iron that withstand steam pressure up to 250 lbs . . . no soldered, brazed, welded or expanded connections to become loose or develop leaks . . . no electrolysis to cause corrosion, breakdowns, leaks, or heating failures.

Capacity tables and complete details upon request. Send for free booklet "Corrosion in Unit Heaters."

HIGH TEST CAST IRON HEATING SECTIONS

D. J. MURRAY MANUFACTURING CO. WAUSAU, WISCONSIN



Maintenance
an important factor in the design of new equipment

Production tools, process equipment, pumps, drives, etc equipped with Split Ball Bearings can boast of trouble-free service and minimum shut down time when repairs are necessary.

For that new design or important redesign, investigate Split Ball, Thrust and Roller Bearings. New 32-page catalog on request.

Write for Bulletin T-11-46

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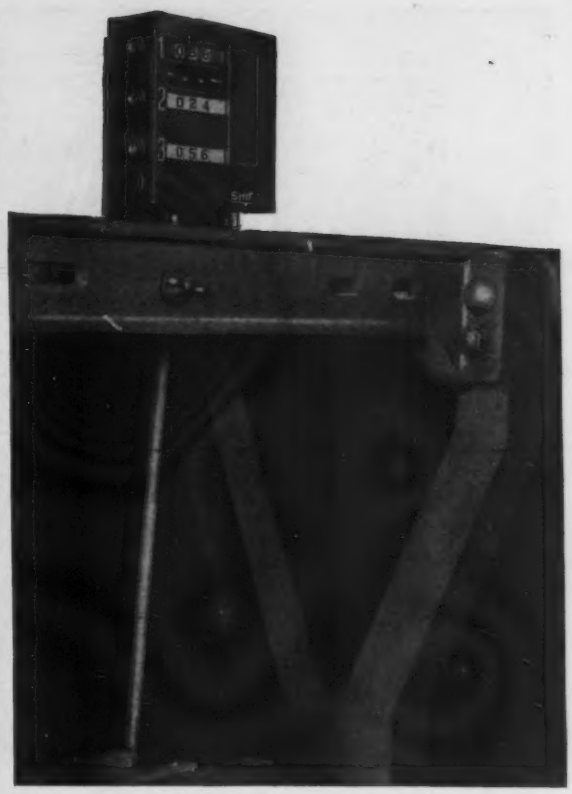
SPLIT BALLBEARING CORPORATION
LEBANON, NEW HAMPSHIRE, U. S. A.



Now, You Can Have
3-Shift PICK COUNTERS
of PRODUCTIMETER make
on your looms!

For over a quarter of a century the name "Productimeter" has stood for precision manufacture, accuracy of count, exceptionally durable construction . . . guaranteed performance.

With the addition of 3-shift Pick Counters to the broad line of Productimeter Counting and Measuring Machines, you can get all these advantages for proper control of your loom production. They're made with a shutter mechanism that absolutely prevents tampering or build-up, and furnished in 3 or 4 figures, reset or non-reset, of rustproof and dustproof construction, complete with mounting brackets and drive. Center drive permits installation on either right or left looms.

Full details on Pick and Hank Counters, Yardage and Revolution Counters, Predetermined and Electric Counters in new

Textile Catalog No. 50.
Send for your copy today!

DURANT MANUFACTURING COMPANY
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131 Orange Street, Providence 3, R. I.

COMMONWEALTH
COLOR & CHEMICAL CO.

More than thirty years' experience in the manufacture of Chemical Specialties, Dyestuffs and Dyewoods for the Textile and Allied Trades

MAIN OFFICE AND WORKS:
NEVINS, BUTLER and BALTIC STS., BROOKLYN 17, N.Y.
PHILADELPHIA - CHICAGO
GLOVERSVILLE - MONTREAL

NEWS ABOUT SUPPLIERS

The Havey brothers have bought the assets and formulas of the former Berkeley Products Co.

Monsanto Chemical Co., Dayton, Ohio, has appointed Milton Kosmin as a group leader at its Central Research Department. He has been engaged in research on several types of organic chemicals and has been awarded a number of patents for original discoveries in this field. He will be responsible for research work on synthetic wetting agents and detergents. H. K. Nason is now **associate director** of the Central Research Laboratory.

Naugatuck Chemicals Division, United States Rubber Co., New York, has appointed George R. Vila, formerly assistant development manager, to be sales manager for latex, Lotol, rubber dispersions, and plastic products. He will make his headquarters at the chemical division's plant in Naugatuck, Conn., but will also maintain an office at the company's general offices, 1230 Sixth Ave., New York.

Apex Chemical Co., Inc., New York, announces that Dr. Seymour M. Hermann, and Sanford L. Hermann, formerly president and vice president respectively, have severed their relations with **this company.**

Dr. Seymour M. Hermann, formerly president of Apex Chemical Co., is now serving the textile and related chemical-specialty fields as a consultant with headquarters at 23 W. 73rd St., New York, and at the laboratories of the American Organic Chemical Corp., Linden, N. J. His son, Sanford L. Hermann, formerly vice president of Apex, is now with the new plant of the American Organic Chemical Corp. at Linden.

American MonoRail Co., Cleveland, Ohio, has recently closed its Charlotte office and transferred its selling and engineering force from that office to 115 Church St., Greensboro, N. C., where W. S. Murphy, formerly of Atlanta, Ga., will make headquarters as district manager in charge of North and South Carolina. Working with him in Greensboro will be E. F. Kulp and C. O. Setzer. The Atlanta office will remain at the present address, 215 Church St., Decatur, Ga., under the direction of H. A. Rehfeld district manager.

ALFRED H. KOCH, newly-appointed Philadelphia branch manager for Minneapolis-Honeywell Regulator Co., as reported in these columns last month.

L. Sonneborn Sons, Inc., New York, has added Francis R. Rody, of Andover, Mass., to its Textile Chemicals Division as special technical representative. He is a graduate of Lowell Textile Institute, and has been connected for the last 18 years with American Woolen Co. and other textile firms as a chemist specializing in analytical work and finishing and dyeing problems.

The Carolina Aniline & Extract Co., Charlotte, N. C., has added E. H. Steere, Jr., to its sales staff. He will make his headquarters in Asheboro, N. C.

SKF Industries, Inc., Philadelphia, has appointed Harrison Wood as New York district manager. He has been assistant district manager since 1941 and was for many years a field engineer for the firm. He succeeds John D. Williamson, who resigned because of ill health after serving as head of the district for 23 years.

Allis-Chalmers Mfg. Co., Milwaukee, Wis., has named Ned Landis as branch manager of its Syracuse, N. Y., office.

Plastics Guild Corp., Paterson, N. J., has added E. J. Jacob to its research staff to assist in the company's expansion program.

Dow Chemical Co. will construct a building at Midland, Mich., for production of Saran polymer. The building is expected to cost $420,000 and equipment $1,520,000.

5 WAYS TO SPEED YOUR NYLON HOSIERY PROCESSING

Maintain smooth production flow — Improve hosiery quality

- **LAUREL Coning Oil #443 for better conditioning**
- **LAUREL Nynit C for better knitting**
- **LAUREL Supergel for cleaner hosiery**
- **LAUREZOL #6 for level shades**
- **LAUREL Peramol for fine appearance, lasting finish**

These **5** LAUREL NYLON Hosiery Processing Agents will enable you to speed up adequate stocks for your share of the tremendous demand for Nylon hosiery.

LAUREL NYLON Hosiery Processing Agents give you a hard-to-beat combination: **1.** an excellent conditioner, makes for better knitting; **2.** an effective lubricator, prevents sticking in pre-boarding operation; **3.** a thorough scour, leaves hosiery clean, ready for dyebath; **4.** an active dispersing agent, has greater penetration, produces level shades; **5.** a lasting finish, adds to the beauty and appeal of your hosiery.

Tested and used pre-war by well-known mills and dyehouses, LAUREL NYLON Hosiery Processing Agents will give you a head start. Phone, wire or write today for trial order and directions for use.

• SOAPS • OILS • FINISHES •

LAUREL SOAP MANUFACTURING CO., Inc.

Wm. H. Bertolet's Sons • *Established 1909*

WAREHOUSES—PATERSON, N. J. • CHATTANOOGA, TENN. • CHARLOTTE, N. C.

OFFICE — 2608 East Tioga Street, Philadelphia 34, Pa.

LAMBETH PRODUCTS
FOR SPINNING, TWISTING, SPOOLING, WEAVING

Herringbone weave spinning tape
spinning tape
Basket weave
"BILTRITE" CANVAS LUG STRAP
(PATENTED)
Basket weave twister & spooler tape
Double loop hook bands for cards, twisters, spoolers, etc. (all lengths and diameters)
Mule ropes all sizes diameters
Braided spindle banding for mules, etc.

LAMBETH ROPE CORPORATION

NEW BEDFORD, MASS., U. S. A.

KNOW EXACT MOISTURE CONTENT
OF YOUR MATERIALS

CERAMIC	FEED	RUBBER
CHEMICALS	FIBER	SALT
CLAY	FOOD	SAND
COAL	GRAVEL	SUGAR
COKE	PAPER	TOBACCO
FABRICS	PULP	WOOD

By means of the Dietert Moisture Teller, you can determine quickly and accurately the moisture content of the materials you use. An experienced laboratory technician is not needed. Any intelligent person can operate it—no curves to plot—no involved mathematics.

The Moisture Teller is a simple self-contained instrument sturdily built, easy to handle and fully enclosed to eliminate all fire hazard.

Electrically heated drying air is driven through the test sample. Temperature may be accurately controlled when necessary. Drying time for most materials is approximately 60 seconds. Built in 4 models.

Write for specifications and prices.

HARRY W. DIETERT CO.

9336 ROSELAWN AVE. • DETROIT 4, MICHIGAN

Whitman

Experienced, Aggressive

Organization!

WILLIAM WHITMAN COMPANY, INC. combines years of experience in textiles with modern methods . . . has a keen knowledge of markets and valuable contacts with important sources of yarn and fabric demand. Its sales staff covers the country . . . thoroughly, intensively, intelligently.

That's why the mills of the WHITMAN group are known as leaders from coast to coast, backed by:

- An alert sales force, young in years, yet brought up in the textile industry and familiar with its problems.
- A styling staff well grounded in textile production problems yet keenly aware of fashion trends.
- Cooperation when desired in problems of taxation and general management.

Inquiries are invited from non-conflicting accounts.

ARLINGTON MILLS *Lawrence, Mass.*

MONOMAC SPINNING CO. *Lawrence, Mass.*

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Cotton and Rayon Fabrics Division: 40 Worth Street, New York 13, N.Y.

BOSTON 78 Chauncy Street · *CHARLOTTE* Commercial Bank Building · *PHILADELPHIA* 1600 Arch Street · *LOS ANGELES* 820 South Spring Street

NEWS ABOUT *Mills*

Cotton Mill News

Abbeville Cotton Mills, Abbeville, S. C., has underway a program of expansion which will involve the expenditure of over $1,000,000. An 86 x 100 ft., four-story addition is nearing completion.

Abernathy Mfg. Co., Laurinburg, N. C., is reported to be planning to move its plant and operate it in conjunction with the New City Mill in Newton, N. C.

Allen Industries, Inc., Detroit, Mich., has let contract to Walter Kidde Constructors, Inc., New York, N. Y., for a new mill at Rahway, N. J. Cost reported over $800,000.

American Thread Co., has ordered enough new machinery for its Hampton Yarn Division, Clover, S. C., to require an additional 150 workers.

Canadian Cottons, Ltd., Cornwall, Ont., plans a one-story mill addition to cost about $100,000, with equipment.

Carolina Mills, Inc., a new concern, has purchased the two Dillion, S. C., plants of Carolina Textile Corp. for $1,700,000.

Davidson Cotton Mills, Davidson, N. C., is reported to be far advanced in negotiations for sale of the mill to unidentified interests for approximately $925,000.

Dayton Rubber Co. plans to expand the production of textile goods at its Waynesville, N. C., plant, and special machinery and equipment will be installed. Textile operations will be transferred from the company's other plants to Waynesville.

Erwin Cotton Mills Co., Durham, N. C., will sell its interest in Oxford Cotton Mills, Oxford, N. C., to Burlington Mills, which will also purchase the holdings of other Oxford stockholders.

Fitzgerald Cotton Mills, Fitzgerald, Ga., plans a complete modernization, including installation of the latest-type looms and remodeling of the entire weave shop.

Gold-Tex Fabrics Co., New York, N. Y., has purchased Cutter Mfg. Co., Rock Hill, S. C., for a reported $1,450,000.

Hickory Grove, S. C.—H. G. Drake of Gastonia, N. C., has leased a building in which he plans to manufacture cloth and drapery materials. Spindles, looms, and other equipment have been installed.

Irene Mills, Inc., Taylorsville, N. C., has completed an addition which will increase floor space by about 40%. Carding and spinning machinery is being installed in the added space.

Lawrence Fabrics Corp., New York, N. Y., has bought majority stock of Lafayette Cotton Mills, Lafayette, Ga. The management of the mill will be retained.

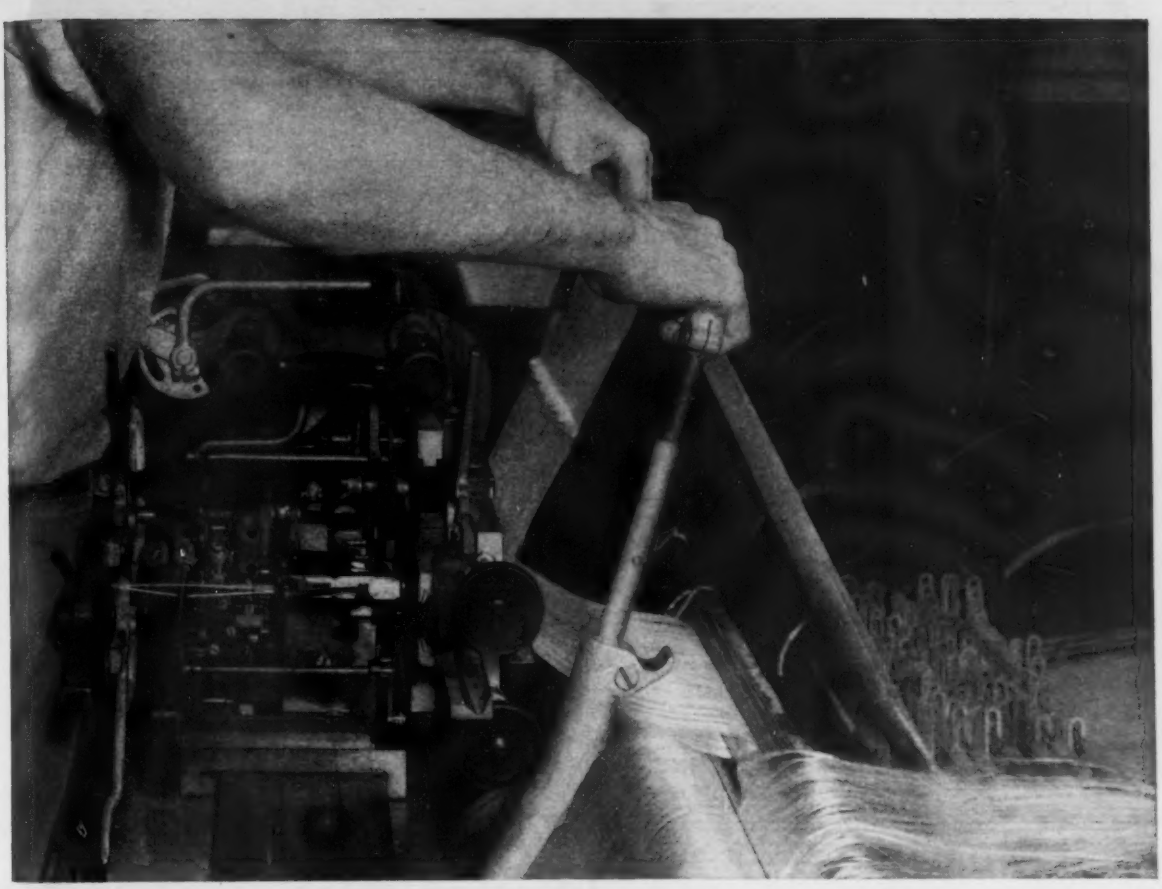
Longleaf Mills, Inc., Matthews, N. C., has let contract to McDevitt & Street Co., Charlotte, N. C., for a $100,000, one-story yarn mill.

George C. Moore Co., Westerly, R. I., has completed negotiations for location in Greenville, Tenn., of a branch plant for the manufacture of elastic webbing.

Opelika Textile Mills, Opelika, Ala., has received CPA approval for construction of a $492,000 addition.

Proximity Mfg. Co., Greensboro, N. C., has purchased from Textron Southern, Inc., the former Chadwick-Hoskins mill in Pineville, N. C., which is equipped with 14,000 spindles and 300 looms.

Puritan Cordage Mills, Louisville, Ky., has purchased



THE "STANDARD" WAY OF REPLENISHING WARP IS WITH BARBER-COLMAN WARP TYING MACHINES

Portable
WARP TYING MACHINE

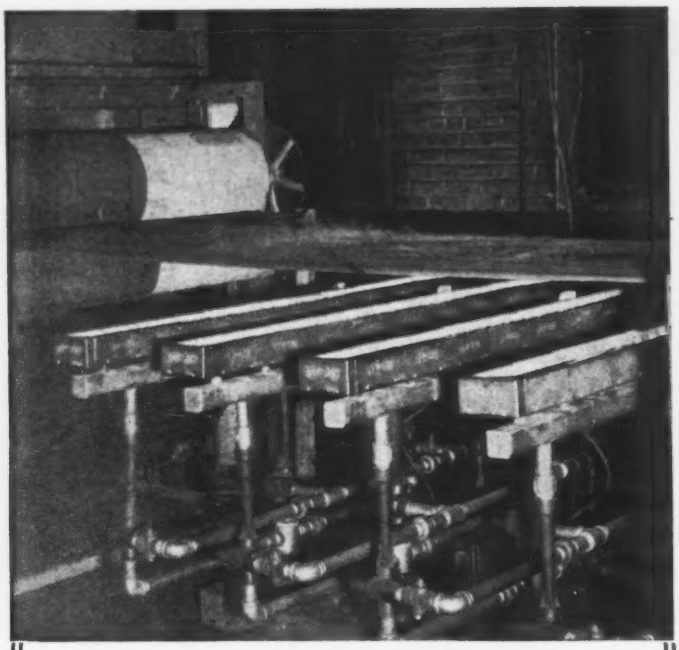
In the horse-and-buggy days, warp replenishment was a tedious task. At the best, you tied-in a new warp by hand . . . at the worst, you drew in a whole new warp, an eye-straining, hours-long job. But, for more than a generation now, a better way has been available . . . a way so good that it is practically "standard" in every up-to-date American mill. Barber-Colman Warp Tying Machines do a better job, more easily, and in a fraction of the time it used to take. The actual knot-tying is mechanical, uniform, accurate, and fully automatic. The operator simply sets up the old warp and new warp in the clamps, combing out the ends to keep them straight . . . then a rapid crank-turning and the work is done. An even row of knots, with ends clipped alike, joins the two warps. The American textile industry is world-famous for efficiency of operation and quality of product . . . and a noticeable contributing factor in this achievement is the dependable performance of cost-saving Barber-Colman Warp Tying Machines.

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • DRAWING-IN MACHINES

BARBER-COLMAN COMPANY

ROCKFORD • ILLINOIS • U. S. A.

FRAMINGHAM, MASS., U. S. A. GREENVILLE, S. C., U. S. A. MANCHESTER, ENGLAND



RED-RAY BURNERS

PRE-DRYING
AHEAD OF DRYER

WRITE FOR BULLETINS

RED-RAY MANUFACTURING CO., INC.
455 W. 45th St. New York 19, N. Y.

For Maintained Shrinkage—
Perfect Finish—Long Life

HUYCK
Sanforizer Blankets

HUYCK SANFORIZER and Palmer Blankets are daily meeting the most exacting requirements of finishers throughout the industry. From the lightest and finest fabric to the coarsest denim, there is a special Huyck blanket to meet your specific needs.

Huyck Sanforizer blankets retain high shrinkage and finish properties to the last.

***PALMER BLANKETS*—also available for your special requirements.**

Write for information
or see our representative

F. C. HUYCK & SONS
KENWOOD MILLS
Albany, New York

all the physical assets of Mallison Braided Cord Co., Athens, Ga.

Smith Mills Co., Lincolnton, N. C., recently organized, has nearly completed the installation of 32 looms and 2,300 spindles. The mill will manufacture print cloth and drapery material. J. E. Smith is superintendent.

Springs Cotton Mills, Lancaster, S. C., is installing air-conditioning equipment in four mills in Chester and Lancaster.

Textiles, Inc., Gastonia, N. C., has sold its Cora mill in Kings Mountain, N. C., to Scranton Lace Co., Scranton, Pa., which made the purchase in order to obtain a needed supply of carded yarns for use in making lace products. The Cora mill operates 18,808 spindles.

Textron, Inc. has leased additional space in a building adjoining Nashua Mfg. Co., Nashua, N. H., and will equip it for increased capacity.

Textron Southern Inc. has absorbed both Gossett Mills, Anderson, S. C., and its subsidiary, Chadwick-Hoskins, Charlotte, N. C. Textron Southern was formed last May as a subsidiary of Textron, Inc., to acquire all outstanding stock of Gossett Mills and Chadwick-Hoskins. As a result of the merger, Textron Southern will operate 12 mills in the Anderson and Charlotte areas with over 200,000 spindles and 4,600 looms.

United Elastic Corp., Easthampton, Mass., has completed construction of a new plant at Stuart, Va. Hugh A. White will manage the plant.

Veteran Mills, Inc., Calhoun, Ga., a new company, is in full operation in a new 280 x 84 ft. building. The mill is producing 50,000 lb. of yarn and duck per month.

Whitley Spinning Co., Clayton, N. C., is now entirely owned by L. P. Miller, Philadelphia, Pa., who purchased the stock holdings of Philip R. Whitley, previous owner. New machinery is being installed in the 10,200-spindle mill to speed up production and reduce the number of employees required.

Wool Mill News

Callaway Mills, La Grange, Ga., is experimenting with worsted yarns in a pilot plant which will eventually be enlarged to operate as many as 20,000 spindles on worsted sale yarns. As soon as equipment is available, wide looms and dyeing and finishing machinery will be installed.

Arlington Mills, Lawrence, Mass., has arranged to purchase the properties and business of Monomac Spinning Co., Lawrence. Monomac operations will continue under the same management and will be known as the Monomac Spinning Division of Arlington Mills.

Drycor Felt Co., Belleville, N. J., has let contract to Joseph J. Mottes, Stafford, Conn., for a $100,000 three-story mill at Stafford.

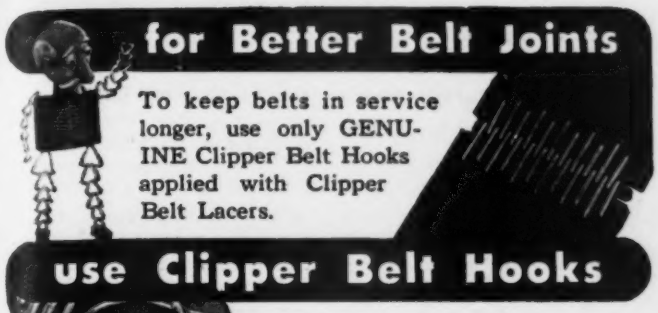
Forte-Dupee-Sawyer Co., Boston, Mass., has let contract to Tredennick-Billings Co., Boston, for an $85,000, one-story woolen mill in Needham, Mass. Charles T. Main, Inc., Boston, is architect and engineer.

Harrison-Walker Mills, Inc., Shelby, N. C., is producing worsted yarns on the cotton system. John P. Harrison is president of the mill, formerly Buffalo Mills, which he purchased late in 1945.

Hayward-Schuster Woolen Mills, Inc., East Douglas, Mass., has begun construction of a $300,000 finishing addition. Theodore H. Engvall, Shrewsbury, Mass., has the general contract. Plans drawn by Charles T. Main, Inc., Boston, call for a 200 x 365 ft., two-story building.

Lawrence Mfg. Co., Lowell, Mass., has completed arrangements with Crescent Corp. whereby it will conduct the operations of William H. Grundy Co., Bristol, Pa., which was recently purchased by Crescent Corp. The managerial staff of the Bristol mill will not be changed.

Wellesley Woolen Mills, Wellesley, Mass., plans to rebuild its mill, which was recently damaged by a fire. Loss, including equipment, was over $100,000.



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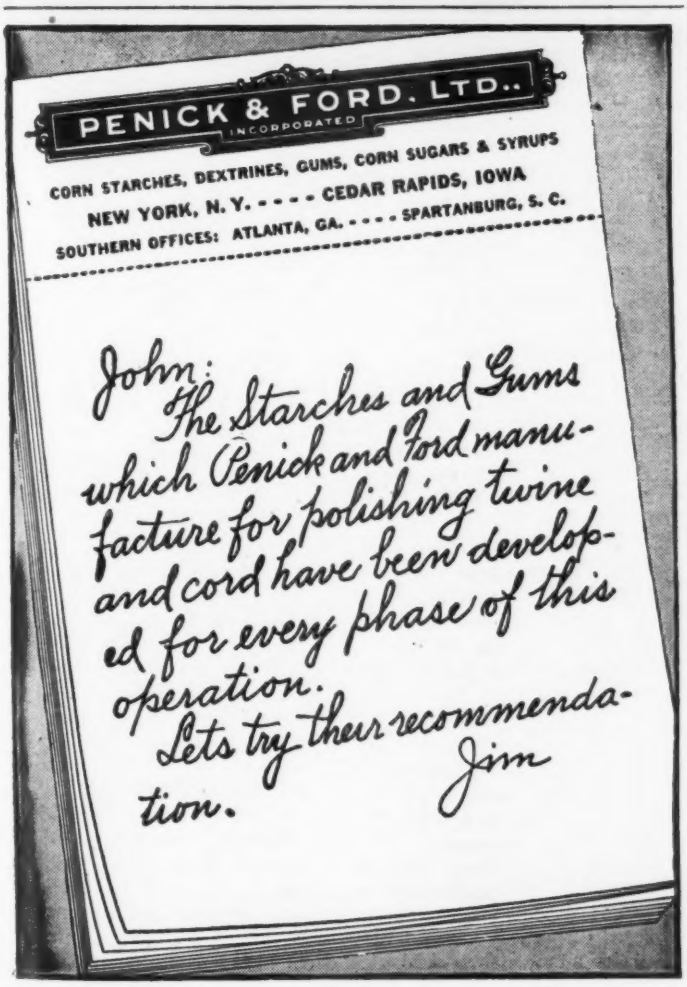
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The Starches and Gums which Penick and Ford manufacture for polishing twine and cord have been developed for every phase of this operation.
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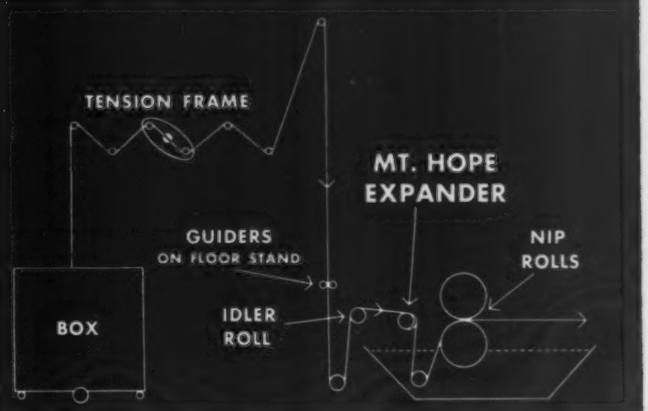
Mount Hope Free-Wheeling EXPANDER



AS USED WITH A STARCH MANGLE

The above diagram shows how a prominent finishing plant uses the Mount Hope Free-Wheeling Expander to keep cloth at maximum width and to prevent the selvage from curling before the cloth enters a starch mangle.

An advantage found in this plant is that, due to the lack of cloth friction on the Mt. Hope Expander the sleeve stays cool, whereas, on other types, the heat generated by friction will cause the sleeve to warp out of shape, particularly near the bearings, and to actually slough off.

The only repairing required to date on this expander has been replacement of the Neoprene sleeve and this has *more* than double the life of sleeves used on other expanders. Since the sleeve represents the major cost of upkeep with any expander of this type, the economy of the Mt. Hope Expander is evident.

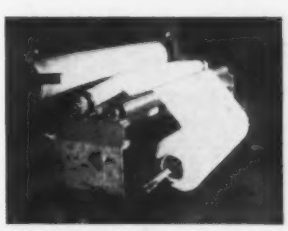
Other advantages are as follows: —

Expanders can be set at any desired angle to the cloth.

Ball bearings, grease packed, are securely mounted in steel spools to outlast many Neoprene sleeve coverings and so designed that they cannot stick nor turn on the axle and cut it.

This expander is suitable for all fabrics, including rayon marquisette and rayon and cotton tire cord.

We will be glad to assist you, free of charge, with your cloth opening, guiding, or cross-stretch problem.



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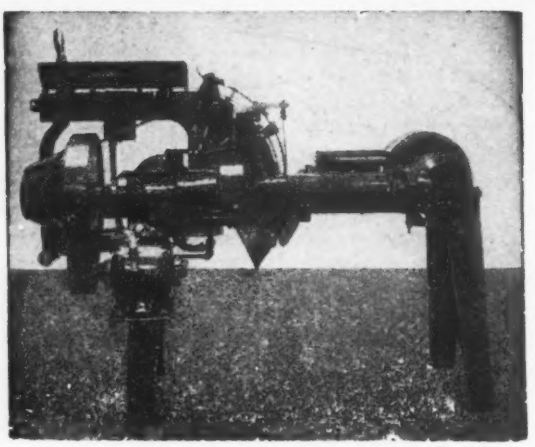

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Rayon & Silk Mill News

American Enka Corp., Asheville, N. C., has received CPA approval for an initial outlay of $7,430,000 on its proposed $20,000,000 mill in Morristown, Tenn. Contract has been let to H. K. Ferguson Co., Cleveland, Ohio. This unit is but one of three which the company is contemplating constructing. The other two are reported to be planned for erection within two years, and the total cost for all three will be between $50,000,000 and $60,000,000.

Associated Textiles of Canada, Ltd., Louiseville, Que., plans construction of a $100,000, 80 x 100 ft., two-story addition which will be used for weaving and dyeing.

Burlington Mills Corp., Burlington, N. C., has arranged with Fabrica Argentina Alpagates to form a new company which will manufacture rayon fabrics in Argentina.

Canadian Celanese, Ltd., Montreal, Que., is reported to be planning another plant to supplement its operations in Drummondville, Que., where a $5,000,000 construction and modernization program is underway. Canadian Celanese, Ltd., has let contract to Marine Industries, Ltd., Montreal, for a 400 x 450 ft., one-story yarn mill at Sorel, Que. Cost, with equipment, reported to be over $1,000,000.

Courtaulds, Ltd., Cornwall, Ont., is making satisfactory progress, despite shortages, in its expansion program, and should have it completed by September, 1947. The program calls for a central viscose plant, a refrigeration building, a staple-fiber plant, and additional office space. Construction will cover an area measuring about 1,000 x 400 ft. and will include a $500,000 drainage system and additions to the boiler house, water-pumping plant, and electrical distribution system. The expansion is expected to produce about 8,000,000 lb. of staple fiber annually, a 13% increase.

Duplan Corp. has work in progress on a new nylon-throwing plant in Winston-Salem, N. C. The plant, which is reported to cost about $2,500,000, is expected to be completed early next year and will employ about 300 workers.

E. I. du Pont de Nemours Co., Inc., has received CPA approval for construction of a $2,008,861 nylon yarn-spinning plant at Chattanooga, Tenn., where the company was previously reported to have received CPA approval for a $20,000,000 nylon plant. Du Pont has also received permission from CPA to proceed with construction of a $5,000,000 addition to its rayon plant in Waynesboro, Va.

Kutztown Mills, Inc., Kutztown, Pa., has been organized by W. T. Winchester to take over the business formerly known as Kutztown Silk Corp. Plans are underway for expansion of the plant, including installation of considerable modern machinery.

North American Rayon Corp., Elizabethton, Tenn., will build a $540,000 mill.

Putnam Mills Corp., Putnam, Conn., has completed negotiations for the purchase of a site on which it expects to erect a building with about 70,000 sq. ft. of floor space for throwing and spinning.

Verney Corp. has absorbed its wholly owned subsidiaries, Verney Mills, Inc., Boston, Mass., Verney Shawmut Mills, Inc., Fall River, Mass., and Verney Taunton Mills, Inc., Taunton, Mass. All plants of the subsidiaries will now be owned directly by Verney Corp.

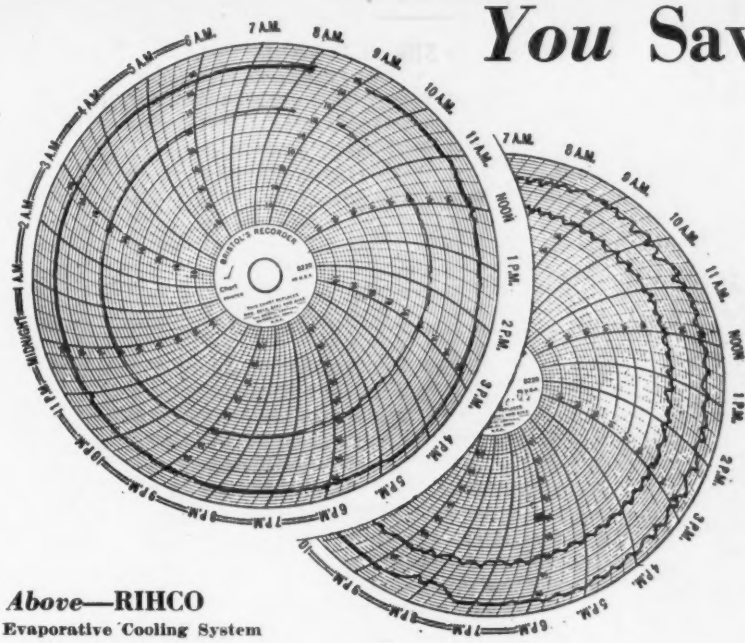
Knitting Mill News

Adams-Millis Corp., High Point, N. C., has an expansion program nearing completion at plant No. 7 in Tryon, N. C., which will double output of the plant. The program, including installation of new 51-gage knitting machines, will cost over $500,000 and will raise employment from 250 to 400.

Argonaut Mills, Inc., Milwaukee, Wis., was recently formed to make knitted pile fabrics. Harry Rosenberg is president and Joseph Rosenberg is secretary-treasurer.

Auman Hosiery Mill, Inc., recently chartered with capital of $100,000, has purchased the Hinshaw Hosiery Mill, Asheboro, N. C., from J. P. Hinshaw, who will remain as manager. Howard Auman is president of the new company.

You Save Money Too!



***Above*—RIHCO**
Evaporative Cooling System

Right*—*RIHCO
Conventional Humidifier System
Temperature curve is outside.
Relative Humidity curve is inside.

• **The charts** are from adjoining rooms in a South Carolina mill maintaining 60% in the spinning and 70% in the twisting room.

• **The Rihco CONVENTIONAL SYSTEM** (right) for humidification operates with controlled humidity only.

• **The Rihco EVAPORATIVE COOLING SYSTEM** (left) operates with controlled air change and both temperature and humidity are controlled. Note the uniformity of both curves indicating tremendous comfort for the operators and more efficient working conditions.

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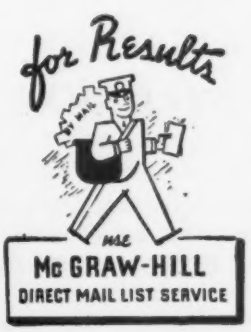

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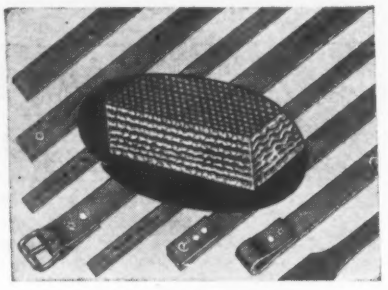
Does your present strapping have ALL of these features ?



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NEWS ABOUT MILLS

Bryan Hosiery Mills, Chattanooga, Tenn., has sold the real estate, plant, and equipment of its Aldon Park mill to Marmode Hosiery Mill, New York, N. Y. No changes in personnel are planned.

Burlington Mills Hosiery Co., Ltd., a subsidiary of Burlington Mills Corp., Greensboro, N. C., has begun operations in the Colonial Mills plant of Dominion Textile Co., Ltd., Montreal, Que. W. J. Armfield, III, is president of the new company.

Chadbourn Hosiery Mills, Charlotte, N. C., has acquired a community center building in a war housing project in Wilmington, N. C., and will convert it into a $75,000 hosiery mill. The plant will employ between 250 and 350 workers in the manufacture of full-fashioned and seamless nylon hosiery.

Durham Hosiery Mills, Durham, N. C., plans an expansion program which will include installation of new 51-gage full-fashioned and 400-needle circular hosiery machines.

Dyco Mills, Inc., Englewood, N. J., has been organized to produce Kayloom fabrics from synthetic, woolen, worsted, and rubber yarns.

Fleetwood Embroidery Mill, Fleetwood, Pa., has been purchased for an undisclosed price by Sarfert Hosiery Mills, Inc., Philadelphia, Pa.

Gastonia Full Fashioned Hosiery Mill, Gastonia, N. C., is engaged in an expansion program which involves new construction and new equipment. Capacity will be tripled. Fine-gage full-fashioned and seamless machines are being added, and facilities for finishing are being installed.

Gay Hosiery Mills, Hickory, N. C., has begun operations making men's anklets.

Globe Knitting Mills, Boston, Mass., has under way an extensive modernization and expansion program which will increase floor space by over 50%.

Gilkey Knitting Co., has leased a building in Marion, N. C., and will operate a mill to manufacture children's underwear.

Gloversville Knitting Co., Gloversville, N. Y., will establish a branch plant in Sweetwater, Tenn.

H & W Hosiery Mill, Meridian, Miss., has completed a new plant. A. D. Hargar is co-owner.

Hewitt Hosiery Mills, Marion, N. C., has purchased the building formerly occupied by the R. L. James & Sons mill and will install 40 new machines for the manufacture of boys' hosiery.

Hillcrest Knitting Co. and **Brookwood Fabrics,** Taylorsville, N. C., have been purchased by Jeffrey J. Shapiro and Morris J. Shapiro, New York, N. Y.

Hub Hosiery Mills, Lowell Mass., has changed ownership. Walter F. Connor has been elected president and treasurer.

IXL Knitting Mills, Robesonia, Pa., has been sold to John W. Lang, New York, N. Y., who took immediate possession. An extensive expansion program is planned.

McCall Hosiery Mills, Marion, N. C., will begin the manufacture of men's anklets within 30 days.

McCrary Hosiery Mill, Asheboro, N. C., has leased a building in Seagrove, N. C., and will install seaming and looping machinery.

Staudt Knit Hosiery Co., Reading, Pa., will soon begin the manufacture of men's fancy hosiery. The company has purchased 40 new machines. W. W. Staudt is president.

Sedgefield Mills, Inc., Greensboro, N. C., expects to have construction of a $12,500 50 x 80 ft. knitting mill completed about Jan. 1. New machinery valued at $25,000 will double present capacity. Robert Baker is president.

Shelton Hosiery Co., Shelton, Conn., has let contract to Mott-Mohr Construction Co., New Haven, Conn., for a $150,000, 100 x 150 ft., two-story mill.

Standard Hosiery Mills, Burlington, N. C., will occupy, under long term lease, a one-story building which is now be-

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Identify and safeguard your yardage at low cost. Quick and easy to use; permanent, boil-proof and dye-resistant.
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ing built in Pittsboro, N. C. Fifty looping machines will be installed.

Textron, Inc., Bates Fabrics, Inc., Burlington Mills Corp., and **Cohn-Hall-Marx** are among the firms which have purchased tricot knitting machines for experimental purposes because of recent improvements in both the machines and fabrics they produce.

Trico-Tex Knitwear Co., New York, N. Y., will make alterations and improvements in a building at 12 E. 37th St. for early occupancy.

United Rayon Mills has received CPA permission to build a rayon-knitting plant in Old Fort, N. C., to replace the plant destroyed by fire in Langley, S. C., last July.

Van Raalte Co. has excavation under way for a new plant in Franklinton, N. C. Merchant Construction Co., Asheville, N. C., has the contract.

West Knitting Corp., Wadesboro, N. C., has sold a majority of its stock to Dr. Charles I. Allen, Fred H. Allen, Fulton A. Huntlet, Hal W. Little, Charles Little, W. Bryan Moore, and Fred S. Thomas, all of Wadesboro.

Whitener Hosiery Mills, Inc., Newton, N. C., has started construction of a plant and will soon be in production of men's anklets.

Dyeing & Finishing Plant News

Allied Textile Printers, Inc., Paterson, N. J., which operates seven plants in northern New Jersey and Rhode Island, is in the process of a consolidation which is designed to integrate the hitherto loosely-knit combine. The plants involved are Arrow Textile Print Works, International Dye & Print Works, Printex Corp., Standard Dyeing & Finishing Co., and Novelty Print Division, Paterson; Opal Processing Co., Inc., Haledon, N. J.; and Perennial Dye & Print Works, Inc., West Warwick, R. I. Robert Gilman, treasurer of Profile Cotton Mills, Jacksonville, Ala., and Holyoke Fabrics, Inc., Holyoke, Mass., will head the company.

Bibo-Castle Corp. has commissioned Grieshaber & Neilan, New London, Conn., architects, to prepare plans for a textile plant to be built in Santa Clara, Cal. Plans will include a 90 x 280 ft., screen-printing room; a 40 x 260 ft. finishing room; a 40 x 80 ft. color shop; a 40 x 45 ft. screen-preparation room; a 40 x 95 ft. gray cloth storage room; and a 50 x 80 ft. finished goods and white cloth room. Total floor space will be about 60,000 sq. ft.

Burlington Mills Corp., Greensboro, N. C., has awarded contract for construction of a new dyeing and finishing plant near Raleigh, N. C. The plant will be known as Neuse River Finishing Mill.

Capital Piece Dye Works, Inc., Garnersville, N. Y., has started work on an addition which will be used for vat dyeing and controlled shrinkage of all types of rayon. Frank Hall, formerly with F. P. Maupai Dyeing Co., West New York, N. J., will be superintendent of the new department.

Dye Masters, Inc., Beverly Hills, Cal., has received permission to construct a $42,000, 118 x 119 ft. plant in Lennox, Cal., near Los Angeles.

Greenville Finishing Co., Centerdale, R. I., has an addition to its plant under way. O. H. Horovitz Co., Cambridge, Mass., is erecting structural steel for the building. Henry M. Soule Co., Pawtucket, R. I., has the general contract.

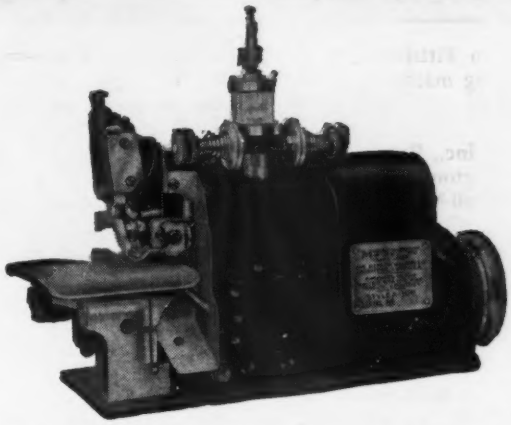
Fall River Dyeing & Finishing Co. Fall River, Mass., has been equipped to do package dyeing.

Mt. Hope Finishing Co., No. Dighton, Mass., has plans for power-plant alterations to cost $110,000.

Rondale Mfg. Co., Brooklyn, N. Y., will open a textile coating plant in Roselle, N. J.

Thornton Dye Works, Inc., Thornton, R. I., is now doing skein dyeing on woolen and worsted yarns.

United Merchants & Manufacturers, Inc., New York, N. Y., has received CPA approval for erection of an $88,000 dyeing and finishing plant in Old Fort, N. C.



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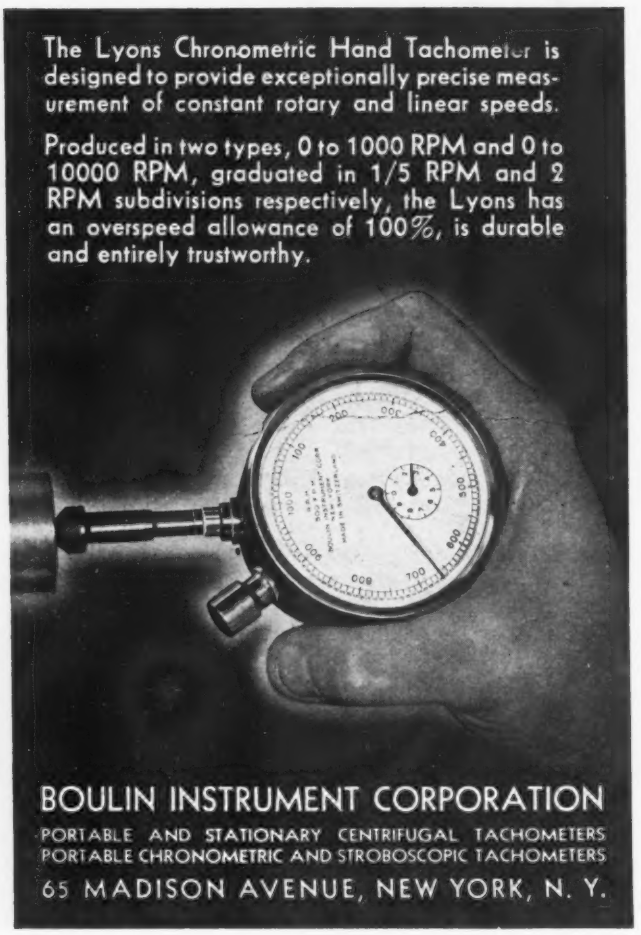
Spring Latch Needle

KNITTING MACHINERY


The Lyons Chronometric Hand Tachometer is designed to provide exceptionally precise measurement of constant rotary and linear speeds.
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PORTABLE CHRONOMETRIC AND STROBOSCOPIC TACHOMETERS
65 MADISON AVENUE, NEW YORK, N. Y.

NEWS ABOUT Men

D. A. Holbrook has become president of Propst Knitting Mills, Inc., Albemarle, N. C., and **E. S. Burns** is now vice president.

William C. Appleton, who recently resigned as president and director of American Viscose Corp. after nine years in those offices, has become president and a director of Selectronic Dispersions, Inc., Montclair, N. J. **Raymond M. Tierney,** who has held that office since the inception of the company, resigned and was elected secretary-treasurer, succeeding **Reuben Kittenplan,** who will still remain active in the company. The office of vice president and general manager is retained by the incumbent, Henry Jenett, who originated the Selectronic process of alloying plastic materials for the molding industry as well as for the protective coating, industrial finishing, textile proofing and other related industries.

George A. Howell, Jr., formerly with Rock Hill Printing & Finishing Co., Rock Hill, S. C., has succeeded **William H. Entwhistle** as vice president and general manager of the Rockingham, N. C., plants of M. Lowenstein & Sons.

William H. Hubbard, vice president in charge of the Holyoke, Mass., operations of William Skinner & Sons, Holyoke, Mass., has been named treasurer. **William Skinner II,** vice president and secretary, has become also assistant treasurer.

A. D. Elliott has succeeded **Henry McKelvie** as director of operations at the Albertville and Gunterville, Ala., units of Saratoga-Victory Mills. He has also been named a director and vice president of the company.

William S. Kilbourne has been elected to the board of trustees of William Skinner & Sons, at a special meeting in Holyoke, Mass., to fill the unexpired term of the late Joseph A. Skinner.

Roland V. Thomas has been named vice president of Chicopee Sales Corp., New York. Mr. Thomas joined Johnson & Johnson, Inc., in 1911.

Charles W. Pollard, vice president of the International Braid Co., Providence, R. I., has been appointed director of sales, succeeding the late John A. Harjes.

William G. Betsch, assistant vice president of William Iselin & Co., Inc., New York, will retire from that office at the end of the year after almost 50 years of continuous service with that company.

Roland H. Gray and **S. A. Steere** have been named vice presidents of Goodyear Clearwater Mills and Goodyear Decatur Mills, which have plants at Cartersville, Rockmart and Cedartown, Ga., and Decatur, Ala. Mr. Steere will continue in charge of operations.

Arthur W. Babbitt, vice president and manager of Clark Thread Co. of Georgia, Austell, Ga., has resigned.

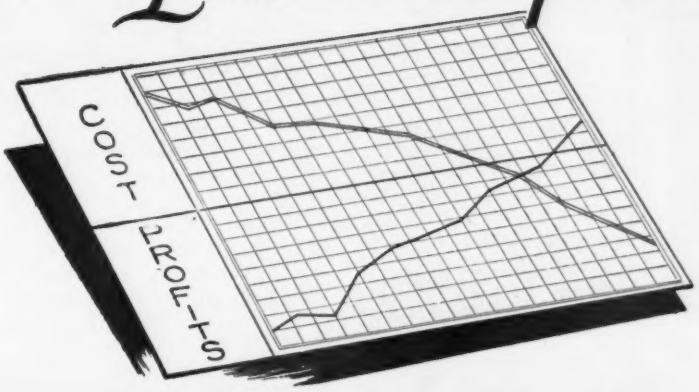
W. F. Robertson, vice president of North Carolina Finishing Co., Salisbury, N. C., has taken over the duties of **John R. Hester,** who recently resigned as vice president and general manager.

William T. Winchester has resigned from the throwing division of Duplan Corp., New York. He has not yet announced his plans for the future.

C. C. Dawson, formerly vice president of Cramerton Mills, Cramerton, N. C., has been made general manager of the Cramerton division of Burlington Mills Corp. **A. L. McArthur, Jr.,** formerly secretary of Cramerton Mills, is now assistant general manager of the Cramerton division.

Z. D. Ford, assistant secretary of Spray Cotton Mills, Spray, N. C., has succeeded **J. G. Farrell** as secretary, and **W. R. Mathews** became assist-

Lowered Production Cost...



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NEWS ABOUT MEN

ant secretary. **R. A. Butler** has been promoted from superintendent to general manager, and **W. P. Barton,** assistant superintendent, has become superintendent.

Percy L. Shutt, formerly resident manager of American Woolen Co.'s Arden Mills, has become resident manager of Shawsheen Mills, Andover, Mass. He succeeds **J. Bottomley,** who resigned. **C. E. Leach,** formerly superintendent of Arden Mills, succeeds Mr. Shutt as resident manager there.

Glen Penland has been appointed director of safety for the Durham, Erwin, and Cooleemee, N. C., plants of Erwin Mills Co. He succeeds **W. G. Marks,** who resigned.

Irving Fain was recently promoted to general manager of Bradley Knitting Mills, Delavan, Wis., and **Glenn R. Sheldon** has become superintendent.

E. S. Tennent, Spartanburg, S. C., has been appointed purchasing agent for all southern plants of Reeves Brothers, Inc. These plants include Fairforest Finishing Co., Saxon Mills, and Warrior Duck Mills, Spartanburg, S. C.; Mills Mill No. 1, Greenville, S. C.; Mills Mill No. 2, Woodruff, S. C.; Chesnee Division of Saxon Mills, Chesnee, S. C.; and Grace Cotton Mills Co., Rutherfordton, N. C.

H. K. Burke has succeeded the late V. A. Mims as general manager of Wehadkee Yarn Mills, Talladega, Ala.

Clarence W. Jackson, formerly with American Thread Co., has been named plant manager of Lima Woolen Mills, Lima, O., a subsidiary of North Star Woolen Mill Co., Minneapolis, Minn. **William R. Reiser,** former manager, has moved to the main office in Minneapolis.

Richard R. Bastian has joined the management group of Glass Fibers, Inc., Toledo, Ohio. He recently resigned as general purchasing agent of Owens-Corning Fiberglas Corp. He had previously served the Fiberglas company as a chemist and as purchasing agent with headquarters in Newark, Ohio.

Frederick T. Mosedale has been appointed sales manager of the Ranger Co., Walpole, Mass., as well as its associate, the Herward Fabrics Co. The Wash Goods Division of Herward, which converts plain and printed cotton fabrics, however, will remain under the direction of **H. Edward Fox.** Mr. Mosedel will make his headquarters at the firms' sales offices in New York.

Fred W. Steinmeyer, credit manager of Pacific Mills, New York, will retire on Nov. 31, 1947, and **Paul E. Hunter,** now in charge of credits for the Worsted Division, will succeed him. Mr. Steinmeyer retires after 40 years continuous experience in the credit field, during the last 26 of which he has been identified with Pacific Mills or with Lawrence & Co., selling agents for the company prior to 1931.

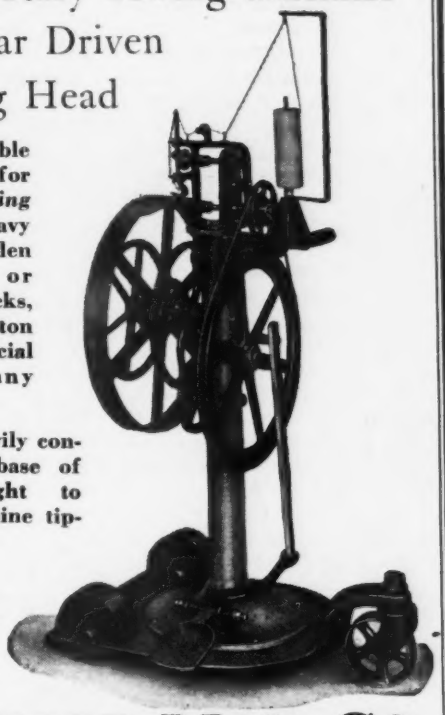
Henry K. Kelly has been appointed manager of American Viscose Corp.'s sales office at Charlotte, N. C., and **S. Reed Anthony** has been named assistant manager of the rayon staple sales division of the New York office. Mr. Kelly has been associated with the Charlotte office since 1928, and has been assistant manager for a number of years. He succeeds **Harry L. Dalton,** who has been manager of the office since 1928, and who was recently elected a director of the corporation. Mr. Dalton's duties will now consist largely of supervising the Southern sales area and general corporation matters.

Dr. Woodford G. Sink, a native of Lexington, N. C., has joined the staff of the Institute of Textile Technology, Charlottesville, Va., to work in the field of stream sanitation.

John Armstrong Waugh has joined the staff of the Institute of Textile Technology, Charlottesville, Va. He has had long experience in the textile industry, first with the Lonsdale Co.; then with H. & B. American Machine Co., where he was engaged in machine erection and new developments, and finally with the Bates Co. where he was overseer of carding for nine years.

Kenneth A. Seward has joined Textron Inc., New York, as assistant to **Carl C. Mattman, Jr.,** in the creation and development of new fabrics. Mr. Seward comes from A. D.

Improved Heavy Duty Foot Power Rotary Sewing Machine With Gear Driven Sewing Head



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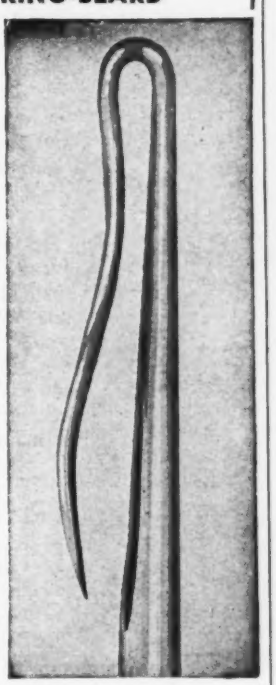
NEEDLES



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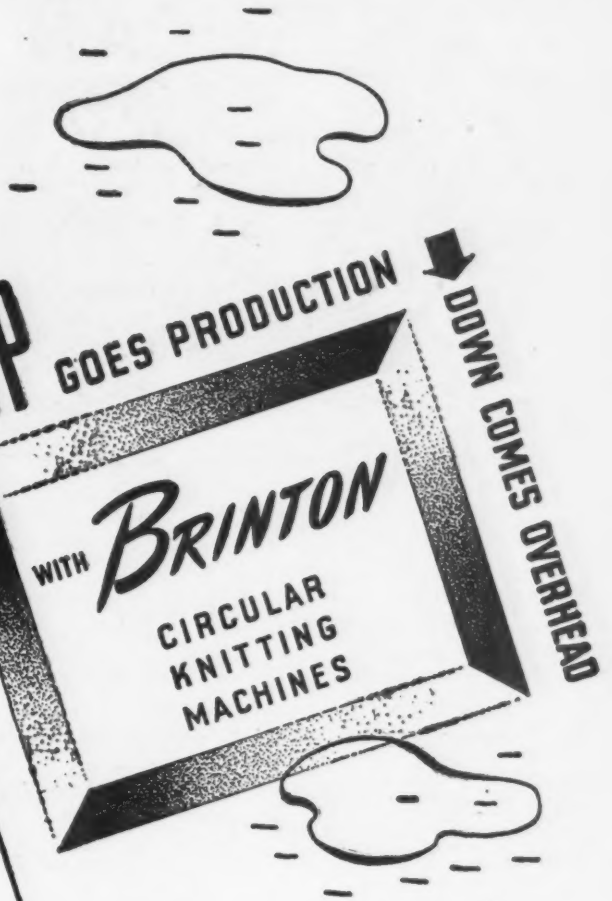

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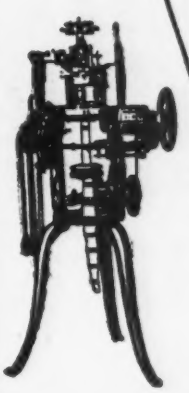

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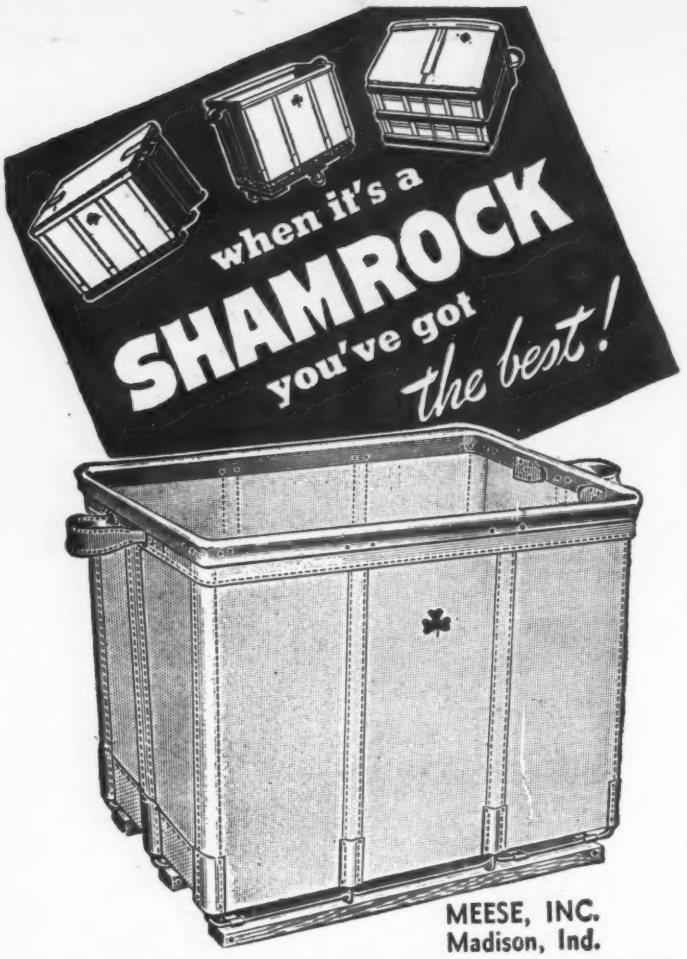

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NEWS ABOUT MEN

Juilliard & Co., where he has served in the same capacity since 1937, with the exception of three years in the army.

Leslie P. Egbert has been appointed general sales manager of the hand-knitting yarn division of James Lees & Sons Co., Bridgeport, Pa. He succeeds the late H. S. Morgan. Mr. Egbert has been with the company for 20 years.

R. S. Stribling, who was superintendent of Southern Bleachery & Print Works, Taylors, S. C., before the war, has been placed in charge of Springs Bleachery, which is being built by Springs Cotton Mills, Inc., at Grace Station, S. C.

Berry Goring has taken charge of a new hosiery mill making anklets in Raleigh, N. C.

Ladd W. Hamrick has resigned from Phenix Mills, Inc., King's Mountain, N. C., to enter business with his brother in the firm of C. J. Hamrick & Sons, Boiling Springs, N. C.

W. G. Huguley, manager of Seminole Mills, Clearwater, S. C., has been appointed general manager of Seminole Mills and of Union Buffalo Mills Co., which has plants at Buffalo and Union, S. C. **John D. Jones** will continue as general superintendent of Union Buffalo Mills Co.

Gordon L. Nichols has succeeded A. J. Cobert as manager of Quitman Hosiery Mill, an, Ga.

verly H. Cousins has re- sign as chief of the cost esti- mat department of Dan River Mil Inc., Danville, Va., to e office manager of Newberry Cotton Mills, Newberry, S. C.

Stanley DuVal has been named assistant to the general manager of American Yarn & Processing Co., Mount Holly, N. C. He was formerly assistant superintendent of Abbeville Mills, Abbeville, S. C.

Francis White, who has been general superintendent of A. D. Juilliard's Atlantic Worsted Mill, Olneyville, R. I., will, according to reports, become assistant agent and superintendent of Wood Worsted Mill, Lawrence, Mass., a unit of American Woolen Co.

John W. Poulson, formerly executive assistant to the president of Fruit-of-the-Loom, Inc., Pontiac, R. I., has been named vice president of the company.

Wm. Byers, for 15 years connected with the Rock Hill Printing & Finishing Co., Rock Hill, S. C., has been appointed personnel director.

Troy Stone, personnel director of Fulton Bag & Cotton Mills, Atlanta, Ga., and member of the executive committee of the Personnel Managers Division of Georgia, has been elected to membership in the National Association of Personnel Managers.

Clarence W. Jackson, who has been with the American Thread Co. for 28 years, will become the plant manager of Lima Woolen Mills Co., Lima, Ohio.

Albert Nash has resigned as production manager of Spartan Mills, Spartanburg, S. C., to become treasurer of Sterling Cotton Mills, Franklinton, N. C.

Arthur Lortz has been named general manager of Sterling Mills, Ilion, N. Y.

Lester E. Carpenter has succeeded **Richard B. Chace** as general manager of Verney Shawmut Mills, Inc., Fall River, Mass.

Wallace Hoge has been named assistant treasurer of Celanese Corp. of America.

L. H. McKee has been named office manager of the Newton Rayon Mills, Newton, N. C., succeeding **Jay Lawrence,** who has been transferred to Covington Weaving Co., Covington, Va.

Gary H. Hovis, formerly with Boger & Crawford Spinning Mill, Lincolnton, N. C., has become general overseer of carding at Carolinian Mills, High Shoals, N. C.

Rudolph Starr, formerly with Green River Mills, Tuxedo, N. C., has become general overseer of carding at Balston Yarn Mills, Lincolnton, N. C.

Ed. Schronce is now overseer of carding and spinning at Rhyne-Houser plant No. 1, Cherryville, N. C.

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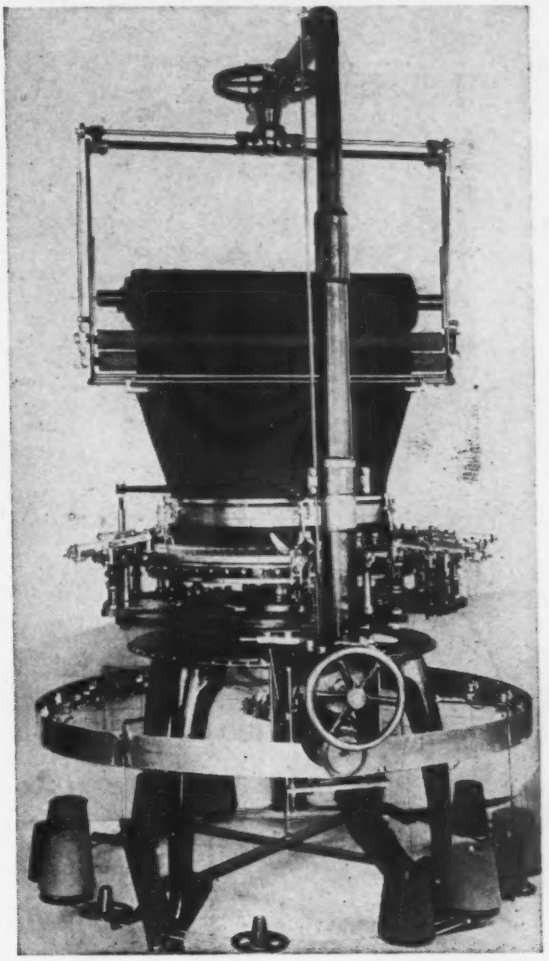

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3. **Produces a superior quality of knitted fabric, getting the most out of every grade and size of yarn.**
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GREENVILLE S.C FALL RIVER, MASS

NEWS ABOUT MEN

Martin A. Bizub has been promoted to superintendent of Fine Spinners, Inc., Paterson, N. J.

Edward McQuaid has been appointed overseer of carding at Cyril Johnson Wool Co., Stafford Springs, Conn. He succeeds **Howard S. Wilcox**, resigned.

W. E. Daniel has been named general overseer of weaving at Carolman Mills, High Shoals, N. C. **P. A. Tisdale** succeeds him as second hand in the weaving department.

Lyle Stoddert was recently made superintendent of picking, carding, spinning, dressing, and weaving at Wool Wear, Inc., Homer, N. Y. Mr. Stoddert was formerly with American Woolen Co. in Winooski, Vt.

W. D. Welch, formerly general overseer at the Madora mill of American Yarn & Processing Co., Mount Holly, N. C., has become superintendent of that company's Union mill in Maiden, N. C.

E. J. Siegrist was recently promoted to plant superintendent of Holeproof Hosiery Co., Milwaukee, Wis.

Ralph E. McKenna has become superintendent of Pomona Mfg. Co., Greensboro, N. C. He succeeds **Robert M. Cushman**, who resigned.

Walter W. Adcock, formerly with Robeson Mills, St. Pauls, N. C., has become assistant superintendent of the Adrian unit of American Yarn & Processing Co., Mount Holly, N. C. He succeeds **Buford A. Robbins**, now at the company's Madora plant.

Ben Byers has been named plant superintendent of Gilkey Knitting Mills, Marion, N. C.

T. W. Kitchen has succeeded **P. E. Smith** as superintendent of finishing at Dan River Mills, Inc., Danville, Va.

Lucien G. Pelletier is now superintendent of Dionne Spinning Mills, St. George Beauce, Que. He was previously with Cluett, Peabody & Co., Inc., North Grosvenordale, Conn.

Fred L. Blair is now an overseer at Miltonia Mills, Milton Mills, N. H.

Obituary

J. S. Wilcox, 52, of Charlotte, N. C., vice president and treasurer of Johnston Mills Co., Charlotte; treasurer of Johnston Mfg. Co., Charlotte; secretary-treasurer of Worth Spinning Co., Stony Point; vice president of Park Yarn Mills Co., Kings Mountain; vice president of Spinners Processing Co., Spindale; treasurer of Union Mills Co., Monroe; and a director of the Park Mfg. Co., Charlotte, died Oct. 15 in a Charlotte hospital.

De Lancey Kountze, 68, chairman of the board of Devoe & Raynolds Co., New York, died Oct. 2. He joined Devoe & Raynolds in 1924. In 1928, he was elected chairman of the board, succeeding Dr. I. W. Drummond, and he served in that capacity until his death.

Israel Saligman, 65, founder and a partner of Queen Knitting Mills, Philadelphia, Pa., died Oct. 12.

J. Harvey White, president of Travora Mfg. Co., Graham, N. C., died recently. Mr. White was a past president of North Carolina Cotton Manufacturers' Association.

T. J. Brantley, 49, co-owner of Deep River Hosiery Mills, High Point, N. C., died Oct. 9.

Abraham Blumberg, 67, one of the founders and treasurer of the Y. & B. Hosiery Co., Reading, Pa., died Oct. 17.

A. M. Fairley, 82, retired executive of the Waverly Mills, Laurinburg, S. C., and a past president of the North Carolina Cotton Manufacturers Association, died Oct. 18. Mr. Fairley also served as the textile industry representative on the NRA board at Washington 1934 to 1935.

James H. McEwen, 52, president of May McEwen Kaiser Co., located at Burlington, N. C., since 1940, died recently. In 1925 he organized the McEwen Knitting Co., which in 1940 was merged with

Speed Production

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ANSUL *Portable* SO_2 ANTI-CHLOR SYSTEM

- EASY TO SET UP
- MORE ECONOMICAL TO USE
- NO HAZARDS—NO DANGER TO GOODS
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➡ **STRONGER YARNS**
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Retain moisture control longer.
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➡ **BETTER LUBRICATION**
More even distribution.
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W. M. DYNES, West Springfield, Mass.
S. T. DOUGLAS, JR., Westwood, Mass.

SOUTHERN REPRESENTATIVES

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JOHN FERGUSON, LaGrange, Ga.
W. E. SMITH, Charlotte, N. C.

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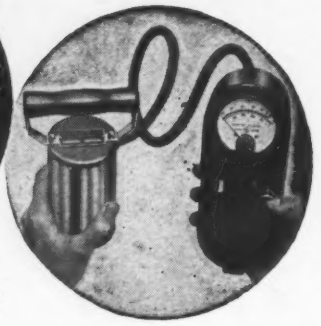

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CHARLOTTE, N. C.

NEWS ABOUT MEN

the May Hosiery Mill, with Mr. McEwen as president of the new organization.

Robert McBratney, organizer of Robert McBratney & Co., died recently. He served as president of the company from its organizing in 1895 until 1943, when he turned the business over to his nephew, Robert McBratney, Jr. He was a former president of the Wool Club of New York.

Gerald B. Aldous, 61, vice president and co-founder of Dominion Knitting Co., Winnipeg, Manitoba, died recently.

James E. Ford, 71, secretary-treasurer of Linford Mills, Inc., Belmont, N. C., died Sept. 18.

William H. Parker, 69, former secretary-treasurer of the U. S. Knitting Mills, Central Falls, R. I., died Oct. 13 at Sandwich, Mass.

Albert L. Grindy, 54, former treasurer of Arnold Print Works, North Adams, Mass., now part of Aspinook Corp., died recently.

Jesse Hodges, 46, Southern representative of American Paper Tube Co., Woonsocket, R. I., died Sept. 27 at Charlotte. Mr. Hodges had been identified with the textile industry for approximately 20 years as a salesman of machinery and accessories.

John L. Dabbs, for a quarter of a century Southern sales manager of the dyestuffs division of E. I. du Pont de Nemours & Co., with headquarters at Charlotte, N. C., died Oct. 4, four days before his 72nd birthday. He had retired two years ago. Prior to his quarter-century with Du Pont, he had been Southern manager for National Aniline & Chemical Co.

Frederick M. Prall, 52, director of the Rayon Technical Patent Section of E. I. du Pont de Nemours & Co., Wilmington, Del., died Oct. 11. He joined the Rayon Division of the company at the Buffalo plant in 1926.

Ronald C. McIlroy, 64, textile engineer and formerly with Columbia Textile Mills, Lewiston, Me., died Sept. 23.

Irving Lewin, 58, general manager of Carter Fabrics Corp., Greensboro, N. C., died Oct. 17. He had been with Cleveland Cloth Mills, Shelby, N. C., and Stanley Mills, Stanley, N. C., prior to going to Greensboro eight years ago.

Joseph M. Gamewell, Sr., for about 20 years general manager of the Erlanger Cotton Mills, Lexington, N. C., died at his home in Orlando, Fla., Oct. 19. He retired in 1936.

Frederick E. Wagg, 82, retired Lewiston, Me., textile official, died recently as a result of an automobile accident. For a number of years Mr. Wagg was overseer of weaving at the Acushnet Mills, New Bedford, Mass. Later he moved to Lewiston where he was employed by the Hill Mfg. Co. for 33 years, the last 10 years of which he was agent.

David Tatro, 90, who died recently, was one of the oldest dyers in New England, dating back to the Harris Woolen Mills in Woonsocket, R. I., as early as 1886. Mr. Tatro retired as a dyer at the age of 70 from the Jefferson Woolen Mills, Jefferson, Mass., in 1926.

Ernest L. Knowles, 85, Southbridge, Mass., formerly paymaster and accountant for Hamilton Woolen Co., died Sept. 11.

Richard Nowell, 74, died Sept. 23, at Newport, R. I. Mr. Nowell was an overseer and loom fixer at the former Clyde Mill, Westerly, R. I., and had been retired since 1931.

Arthur Bower, 70, for the last 28 years overseer of weaving at the Ayer Mills of American Woolen Co., Lawrence, Mass., died recently at Lawrence, Mass.

James Kearney, 73, for the last 30 years superintendent of James Smith & Son Co., Worcester (Mass.) textile machinery manufacturers, died recently.

Arthur L. Scott, 83, head machinist at Hampton Co., Easthampton, Mass., from 1911 until his retirement in 1935, died Sept. 19.

John G. Echmalian, of Manchester, Conn., a textile authority and director of the Howell Cheney Technical School, died at his home on Sept. 25.

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POSITIONS VACANT

BOSS CARDER for second and third shift wanted for first-class woolen mill located in New England. P-862, Textile World, 330 W. 42nd St., New York 18, N. Y.

WANTED: Overseer for carding and spinning. Excellent pay. This would be a good opportunity for an ambitious second hand looking for advancement. Barnett Woolen Mills, 520 S. Muskego Ave., Milwaukee 4, Wisconsin.

WANTED: Machine Designer to develop design of textile machinery. Please send complete outline of education, experience, age, and salary desired. Write—Berry Engineering Service, 159 Georgia Ave., Providence 5, R. I.

KNITTER MECHANIC, Wildman spring needle, originality essential, executive salary to qualified man. P-895, Textile World, 330 W. 42nd St., New York 18, N. Y.

KNITTER MECHANIC, Supreme circular latch needle, knowledge pattern wheel designing. Salary consistent with ability of applican. P-896, Textile World, 330 W. 42nd St., New York 18, N. Y.

WANTED: Industrial Engineer with experience in the manufacture of Asbestos Textiles. Must have degree in Industrial Engineering and be expert in time and motion study. Submit resume of education, experience and salary expected. P-897, Textile World, 330 W. 42nd St., New York 18, N. Y.

TEXTILE TECHNICIAN for factory near New York State experience and salary expected. P-898, Textile World, 330 W. 42nd St., New York 18, N. Y.

POSITIONS WANTED

SILK AND RAYON fabric expert. Practical mill man, with 20 years experience in fabric analysis, styling, cost calculation, mill supervision and converting seeks connection with manfuacturer or converter. PW-868, Textile World, 330 W. 42nd St., New York 18, N. Y.

TEXTILE CHEMIST available with twenty-three years' experience in cotton and rayon piece goods dyeing and finishing. Age forty-eight, unmarried. Able to take charge of laboratory. College degree. Prefer Philadelphia area. PW-869, Textile World, 330 W. 42nd St., New York 18, N. Y.

EXPERT in cotton spinning with wide experience in Argentina and Peru, working with European and American machinery—knowledge of high stretching Casablanca system—wants to obtain position. Any location. References certified. J. Monks, 1330 Morris Ave., Bronx, N. Y.

ENGLISHMAN, 39, married, in charge large cotton mill in India wishes obtain position as Manager in U.S., South America. College-trained, 4 years experience with well-known machinists, 7 years in charge research plant of large Cotton Research Institution, followed by 9 years experience in the East. Used to poor labor, latest methods processing combed carded single and doubled yarns. Can produce excellent references. Free early 1947. PW-901, Textile World, 330 W. 42nd St., New York 18, N. Y.

(Continued on page 292)

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Chem. or Petroleum Engr.—Patent Atty.—30-35—Considerable Exp. All Phases Patent Work—Penn

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30 W. Washington Chicago 2, Ill.

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WANTED

Young Man for

Assistant Superintendent

Must be Textile School Graduate with practical experience in Scouring, Carding, Combing, Drawing, Spinning (Bradford System). Give full particulars in first letter. Reply

P-884, Textile World
330 West 42nd St., New York 18, N. Y.

SUPERINTENDENT WANTED

For progressive Jacquard weaving mill in the South making high quality upholstery and drapery fabrics. Must be thoroughly experienced with all phases of manufacturing and with managing people. Excellent opportunity for man to continue to grow with the plant, expanding from 100 to 250 looms. Salary Commensurate with ability.

P-891, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

PHYSICIST OR ENGINEERING PHYSICIST

With experience in Textile Fibre research and microscopy. Type of work would include engineering development and research. Location Northeast Ohio. Relpy giving age, education, experience, salary desired and enclose recent photograph. Apply

P-914, Textile World
520 North Michigan Ave., Chicago 11, Ill.

MEN WANTED
POSITIONS OPEN

General manager cotton mill (foreign)
Superintendent Southern jacquard weaving mill
Superintendents Southern Cotton mill $8,000 year, bonus and free house
Manager sweater mill
Superintendent worsted yarn mill, 2nd shift
Superintendent outerwear, sweater, underwear mill (Canada)
Night superintendent cotton mill
Assistant superintendent cotton rayon weaving mill
Electrical engineer So. America
Finisher goods percher $80
Foreman cutting and finishing
Chemist, New England
Overseer cotton carding and spinning (So.) $70 week, bonus and free house
Expert in gigging, napping, teaseling, broadcloths
Overseers woolen carding and woolen spinning, and carding and spinning combined
Overseer burling and mending
Assistant superintendent mill on West Coast
Foreman sweater finishing
Boss knitter
Boss finishers woolen fabrics
Woolen-worsted loom fixers $1.25-$1.50 hr.
Loom fixer paper fibre rug looms
Overseer cotton weaving (South) $70 week bonus and free house
Knit goods dyer and bleacher nights
Second hand dyeing woolen mill
Woolen mill master mechanic $100 week
Thread dresser tender
Assistant superintendent, overseers and second hands for cotton weaving, assistant boss carder, assistant boss spinner, comptroller, office manager, dyer, chemist, colorist, slasher tender, loom fixer and comber fixer for cotton mills in So. America and many others.

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Over 45 years in business

RASCHEL MECHANIC

Large, progressive plant has vacancy for a first-class Raschel man. Must be able to make textile patterns in excess of 2-bars also train help. This well-equipped plant is located in a small, beautiful town. Permanent, well-paid position for right party. Write

P-890, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

Young man, less than 35, with some knowledge of textile design and preferably with degree in textile engineering. Duties in rapidly expanding decorative and upholstery fabric section of nationally known textile manufacturing company will be to act as liaison between designers and mill, work out details of fabric design and construction, keep records of fabrics and samples, and initiate sample requests and production orders. Location of job, New York City. If interested, please send resume giving complete details of educational and experience qualifications to:

P-889, Textile World
330 West 42nd St., New York 18, N. Y.

(Additional Employment Advertising on pages 292 & 294)

SEARCHLIGHT SECTION

WANTED

DESIGNER OF FABRICS

For established Canadian Knitting mill. Should be experienced in mechanical operation of spring and latch needle machines and in the construction and designing of all types of knitted fabrics. Unusual opportunity.

In applying please state age, references, salary expected, and give full details of experience. Address in confidence.

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294 Washington Street Boston, Mass.

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YARN SUPERINTENDENT
WANTED

Excellent opportunity in woolen mill for top notch yarn superintendent. Must have thorough knowledge of carding and good experience in all other departments. Company located in Massachusetts is long established and interested only in high quality man desiring permanent position.
Wanted by our client.

Apply only in writing to

Barnes Textile Associates, Inc.
10 High Street, Boston, 10, Mass.

Replies will be held strictly confidential.

PRODUCTION MANAGER WANTED

Pile upholstery fabric mill desires man with seasoned experience to direct production of all types of pile fabrics for upholstered furniture and the women's wear fields. Good opportunity available to individual who thoroughly understands every process in the manufacture of pile upholstery fabrics for the furniture trade, and pile fabrics for the women's wear trade. He must also be able to plan production to meet changes in style trends. To such a man will be given important position and good salary. Our employees know of this advertisement and all replies will be confidential.

CLARK MILLS CO., INC.
(Formerly Hind & Harrison Plush Co.)
991 Sixth Avenue New York City 18

EXCELLENT OPPORTUNITY
for
RASCHEL MAN

Wanted, experienced Raschel Knitting Machine Specialist. Must be capable of setting up all kinds of patterns and have thorough knowledge of capabilities of machine, experience on rubber yarn desirable. This opportunity is very unusual and intensely interesting for man of right personality.
Write details. Salary to be paid is of secondary importance.

P-892, Textile World
330 West 42nd St., New York 18, N. Y.

Manufacturing Foreman or Superintendent

Experienced in the Manufacture of Driers preferably Textile Driers

Box 813 1474 Broadway, New York

WANTED
CAPABLE SUPERINTENDENT—FIXER

Familiar with full fashioned hosiery machines and capable of taking charge. Excellent future for such a man in a Latin-American country. Reply

P-888, Textile World
330 West 42nd St., New York 18, N. Y.

3 EXPERTS WANTED

A first class New England woolen mill-manufacturers of high grade goods wants to engage an expert finisher, an expert dyer, and an expert examiner. Only those who have held similar positions in a first class mill may apply.

P-811, Textile World
330 West 42nd St., New York 18, N. Y.

POSITIONS WANTED
(Continued from page 291)

WEAVING SUPERVISOR: Textile School graduate, age 31, 13 years of practical experience in weaving of woolen and worsteds. Thorough knowledge of C & K automatic and box looms. Presently employed desires change. PW-899, Textile World, 330 W. 42nd St., New York 18, N. Y.

COTTON SPECIALIST—ten years experience in classification, variety surveys, fiber length, strength, and fineness tests. P. O. Box 216, Avondale Estates, Georgia.

TEXTILE ANALYIST—Twelve years experience in supervision of manufacturing silk and rayon yarns; physical and chemical analysis of all types of textile yarns, fabrics, and fibres. Promulgation and writing of textile specifications. Textile Institute graduate. Age 33, gentile, married. PW-900, Textile World, 330 W. 42nd St., New York 18, N. Y.

SUPERINTENDENT of cotton yarn mill, with twenty-five years experience producing carded, combed and blended yarn, desires to make a change. Fully capable of managing mill from the purchasing of cotton to the selling of product. Several years engineering experienced has equipped me with sufficient knowledge to produce quality work at a minimum cost. Age 47, married with family. PW-902, Textile World, 520 N. Michigan Ave., Chicago 11, Ill.

RAYON THROWSTER—desires connection with reputable concern. 18 years practical experience all type crepe and combination yarns, rayon and acetate yarn for the weaving trade. 15 years experience as superintendent and general supervisor of throwing. Organized 4 new modern throwing plans successfully building up complete organization. Employed 10 years with one concern as general supervisor of throwing for three plants. Can furnish the best of reference as to qualification, ability and character from some of the most outstanding mill men in the South. Now available. Married. Age 44. Prefer connection in southern states if possible but would consider other location. PW-903, Textile World, 330 W. 42nd St., New York 18, N. Y.

TEXTILE EXECUTIVE
Available

Highly competent mill manager. Now doing excellent job for outstanding Southern mill group. Good reason for seeking change. Young man (40), textile education, broad experience cotton, spun rayon, blends and mixtures, yarns and fabrics. Good manager of help, able in cost, quality and production control.

PW-879, Textile World
330 West 42nd St., New York 18, N. Y.

PLANT MANAGER
DYEING, PRINTING AND FINISHING

Thoroughly experienced in plant management, processing and production, full knowledge of all equipment and its operation, desires new contact where knowledge and ability can be used to full advantage. Interested in new projects or reorganization of present set-ups.

PW-800, Textile World
330 West 42nd St., New York 18, N. Y.

AVAILABLE
TECHNICAL DIRECTOR

Graduate engineer seeks permanent administrative position in textile industry. Eleven years in research and consulting fields. Actual experience with all phases of technical activities, including product and equipment development, laboratory organization, quality controls, administrative routines and technical publicity.

Available Jan. 1 Min. Salary $6000

PW-878, Textile World
330 West 42nd St., New York 18, N. Y.

POSITIONS WANTED

TEXTILE SCHOOL Graduate, 26 years. Married, desires position in woolen or worsted field with a progressive firm. Have some experience in woolen line. Salary commensurate with location and responsibilities. PW-904, Textile World, 330 W. 42nd St., New York 18, N. Y.

THROWING SUPERINTENDENT: available after the first of the year. Aggressive, thoroughly experienced in all phases of throwing and converting of synthetic yarns and silk. Good record and reference furnished. PW-905, Textile World, 330 W. 42nd St., New York 18, N. Y.

SUPT. COTTON and spun rayon blended weaving, slashing spinning and carding wanted by a young man at present employed as supt. Experience with dress sheer goods, shirting twills sateens, linings, broadcloth novelty fabrics experience with Draper C&K. auto box looms, Whitin spinning carding. PW-906, Textile World, 330 W. 42nd St., New York 18, N. Y.

SUPT. OR Overseer weaving warping, slashing, cotton, rayon, nylons spun rayon dress goods satins shirting twills linings crepes novelty fabrics draps Stafford box looms. At present employed as boss weaver, assuring quality production and low cost. PW-907, Textile World, 330 W. 42nd St., New York 18, N. Y.

DESIGNER, age 30, married, sober. Now employed, desires change. Ten years' experience on 16-20 harness Dobby work. Cotton and blends. Capable of planning and ordering production throughout the mill. PW-908, Textile World, 330 W. 42nd St., New York 18, N. Y.

SUPT. OR OVERSEER of knitting room. 23 years experience in all phases of rayon cloth and seamless hosiery including 400 needle. Have excellent mechanical and supervisory background. PW-909, Textile World, 330 W. 42nd St., New York 18, N. Y.

TEXTILE ENGINEER, veteran age 25, graduate Lowell Textile general engineering course, desires position with a future. Some Fund. Fashioned Hosiery Experience. PW-910, Textile World, 330 W. 42nd St., New York 18. N. Y.

SUPERINTENDENT OF Weaving or Overseer seeks position on C&K looms, all models of drapers, on any kind of material. I have 23 years of technical and practical experience. Excellent reference if required. PW-911, Textile World, 330 W. 42nd St., New York 18, N. Y.

TEXTILE TECHNICAL school graduate designer, young, ambitious with vision long experience in cotton manufacturing, seeks position. PW-912, Textile World, 330 W. 42nd St., New York 18, N. Y.

SELLING OPPORTUNITIES WANTED

HOLLAND—Having connections with all the manufactures of knitted goods, hosiery and underwear in Holland, I would like to represent Yarns for all Textiles, Manufacturing of Textiles, Manufacturers of Textile Machinery and Needles for knitted goods. H. J. Hofs, 11 Hindelaan, Hilversum, Holland.

(Continued on page 294)

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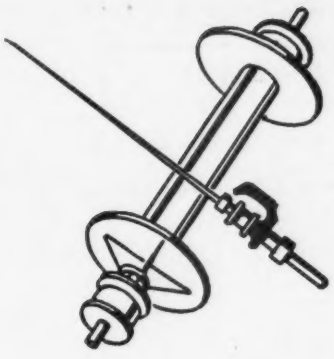

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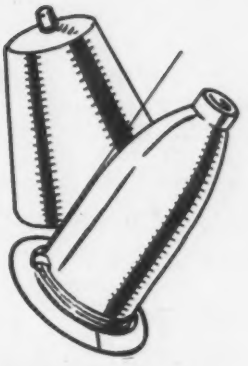

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WOOL WASHERS
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OPA REGISTRATION NUMBER 789
EST. 1923

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DOMESTIC TELEPHONE PEnnsylvania 6-8014 EXPORT

SPECIALISTS IN SELLING AND PURCHASING TEXTILE MACHINERY, ACCESSORIES AND MILL SUPPLIES

SELLING OPPORTUNITY WANTED

(Continued from page 292)

WELL INTRODUCED commercial firm desires goods of every description, particularly textiles. Ruben, 15 Eriksbergsgatan, Stockholm.

WANTED

RAYON HANDBOOK wanted, also Knecht & Fothergill Textile Printing. Indicate price and copyright date. Literary Mart, 8 East 33rd St., New York.

WANTED: 4 x 1 C & K automatic wid looms. Give full particulars. W-913, Textile World, 330 W. 42nd St., New York 18, N. Y.

SALES REPRESENTATIVE

Nationally known manufacturer of chemical specialties for rayon processing offers unusual opportunity for qualified sales representative in Pennsylvania territory. Must understand throwing, sizing and weaving processes, all types synthetic knitting and weaving yarns, including Nylon. Selling and practical mill experience preferred. Give complete information including age, education, training, experience, references.

RW-885, Textile World
330 West 42nd St., New York 18, N. Y.

THROWSTERS REPRESENTATIVE

Can secure best weaving and knitting accounts. Can lay out profitable production and supply New York office.

RA-886, Textile World
330 West 42nd St., New York 18, N. Y.

WORK WANTED

We represent a group of small companies, who have open facilities for ferris and non-ferris castings, press work, heattreating, plating, assembling, production machinery of all types, and tool room facilities for the manufacturing of tools, dies, and fixtures—Quotations cheerfully given.

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Loft Building

5 floors total 24,000 sq. ft.

LIVE STEAM

250 H. P. BOILER

Large Elevator

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LEGAL NOTICE

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933

Of Textile World, published monthly at Albany, N. Y., for October 1, 1946.

State of New York }
County of New York } ss.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared J. A. Gerardi, who, having been duly sworn according to law, deposes and says that he is the Secretary of the McGraw-Hill Publishing Company, Inc., publishers of Textile World, and that the following is, to the best of his knowledge and belief a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, to wit:

1. That the name and address of the publisher, editor, and business manager is: McGraw-Hill Publishing Company, Inc.; Editor, C. W. Bendigo; Managing Editor, W. B. Dall; Business Manager, William Buxman, all of 330 West 42nd Street, New York 18, N. Y.

2. That the owner is: McGraw-Hill Publishing Company, Inc., 330 West 42nd Street, New York City. Stockholders holding 1% or more of stock: James H. McGraw; James H. McGraw, Jr.; James H. McGraw, Jr., Curtis W. McGraw and Edwin S. Wilsey, Trustees for: Harold W. McGraw, James H. McGraw, Jr., Donald C. McGraw and Curtis W. McGraw, all of 330 West 42nd Street, New York City; Edwin S. Wilsey and Curtis W. McGraw, Trustees for James H. McGraw, 3rd, Madison, New Jersey; Curtis W. McGraw, Donald C. McGraw, both of 330 West 42nd Street, New York City; Mildred W. McGraw, Madison, New Jersey; Grace W. Mehren, 536 Arenas St., La Jolla, Calif.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None.

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J. A. GERARDI, Secretary.
McGRAW-HILL PUBLISHING COMPANY, INC.
Sworn to and subscribed before me this 24th day of September, 1946.
[SEAL] ELVA G. MASLIN.
(My commission expires March 30, 1948.)

Thanks to this gentleman they picked the name LOWELL

for that famous Massachusetts City . . .

IT was their ability to use the whole 30-foot fall of the Merrimac River that determined the location of the original Merrimac Cotton Mills; and the wheels were started September 1st, 1823. But what should they call the town? The choice narrowed down to two names—Derby or Lowell. All credit, then, to Mr. Nathan Appleton of Edinburgh, Scotland, who selected the name LOWELL, in honor of Mr. Francis C. Lowell, originator of the first complete cotton mill in the world. Lowell was incorporated as a town in 1824, became a City in 1836. Charles Dickens visited the mills in 1824 and regarded their working conditions as far superior to those in England. At that time, some 5,000 "females" were employed.

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3—Batchers or Rolling up machines, 60", 65", 70"
2—#100 Sturtevant Blowers, paddle type
2—C&M 2-cylinder Brushing machines, 62½" and 72"
3—Button Breakers, 2-48", 1-50"
1—48"x60" Bridesburg Card Set, 2 cylinders, wood
1—48"x48" Furbush & Gage Card Set, 3 cylinders, wood
1—100 spindle #25 Foster Doubler, with 5 HP motor
1—6-delivery H&B Drawing Frame
1—Set 20 H.W. Butterworth 108" Dry Cans, dryer, motor driven, with Reeves drive
1—Reeves Drive, Range 3-1, Size 6, Class G
1—Reeves Drive (small)
1—72" Schofield Automatic Duster
1—54"x54" Batch Type Waste Duster
1—6' Sargent Cone Duster with fan
2—26" Tolhurst Extractors, belt driven
1—30" American Laundry Extractor
6—40" and 60" Tolhurst Extractors
1—45" Dobson & Barlow Cotton Feeder
5—40", 42" E&H Flat Folders with take-up stands
1—66" Folder (ceiling or machine)
1—100" C&M Flat Folder, motor driven with hydraulic lift and roll-up stand
1—Rodney Hunt M-3 2-string Fulling Mill
6—#7 Hunter 2-string Fulling Mills
1—48"x21" Smith & Furbush Garnett
1—49"x20" James Smith Garnett
18—40", 48", 60", 80" Card and Napper Grinders
2—Peerless Belt Lacing Machines
1—Card Lacing Machine with ½ HP Ind. Motor
2—45½" C&K 4x1 non-automatic, motor driven Looms with silk rool take-up
120—45½" reed space Modified E Draper Looms with lacey tops, 3 bank stop motions, worm take-up, belt driven
1—48" C&K 4x4 box Loom, 25 harness, belt driven, friction clutch
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2—82" (1 Union) and (1 McCloskey) 4x4 Box Looms, 25 harness, friction clutch drive
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10—92" C & K, 4 x 1 Automatic Looms, 8 Harness, Cam Motion, Motor Driven.
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1—66"x23" P&W 60 yd. Measuring Machine, sanded roll, belt driven
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5—80" D&F 20 roll Single and Double Acting Nappers
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1—45" 2 roll Padder, rubber rolls
1—42" Olsham Fearnaught Picker
2—48" Parkhurst Burr Pickers with blower
2—48" C.D. Sargent Burr Pickers
1—54" Werner Single Color Printing Machine
7—52", 65½", 66" and 98" Voelker and Gessner Single and Double Bed Rotary Cloth Presses
4—50 spindle Carpenter 54" Skein Reels, non-adjustable
1—60" P&W Single Blade Smooth Woolen Shear
1—60" C&M Single Blade Plush Shear
2—60" and 66½" P&W Single Blade File Tooth Woolen Shears
2—66½" P&W Single Blade Woolen Shears
11—65½" P&W 2-blade Shears, Model B
1—66" P&W 2-blade Shear, Model A
4—76" C&M Single and Double Blade Shears
1—42" C&M Singer with hood
1—32½" D&F Jack Spool Winder
6—Smith and Furbush Spoolers, 44" drums,, 48 ends, 44½" long spools with 10" head. Complete with spool stands.
1—100 spindle Whitin Spooler with Foster Tensions, McCall Guides
1—60" C&M Single Brush Tiger
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OPA REGISTRATION NUMBER 789

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4—Eastwood Double Deck Winders..256 Spindles Each
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100,000 Fibre Head 3⅜" Traverse, 2¼" Head
50,000 Fibre Head 3½" Traverse, 2¼" Head
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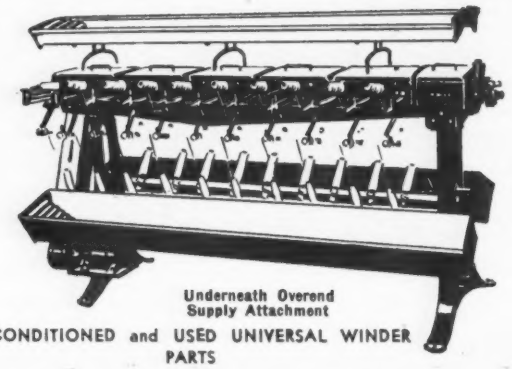

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1—P. & W. 66" Double Shear, Mod. "B"
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2—Spencer Automatic Oilers, 48"
1—1300 hook Royle Card Repeater & Lacer
20,000 Wood Spools, 4"x6", 4½"x6"
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1—Gessner 66" "Jumbo" Press
1—L. & G. Chenille Cutter, all New Knives, & clutch
1—Set (7) Copper Cans 33"x23"
1—Simpson 2 drum continuous cloth winder, 44"
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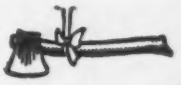

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4—K & G & Burkhardt 60" Extractors, rubber baskets
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3—K. & W. Obermaier & Buhlmann skein dyers.
1—Sargent 3-bowl scouring train, 48" bowls.
3—Yarn scouring & dyeing machines, all stainless steel.
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2—3-Apron Conveyor Dryers.
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1—Van Vlaanderen Net Dryer.
1—P & S Multi-pass Conveyor Dryer.
1—P & S 2-section skein dryer.
1—Van Vlaanderen Net Dryer.

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2—Woonsocket 86" 20-roll S.A.B.B. Nappers.
1—Woonsocket 86" 24-roll D.A.B.B. Nappers.

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1—Butterworth 90' Tenter Frame, 50".

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1—General Machine Co. Palmerette.

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1—Textile 60" Coating Unit with geared pump.
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1—Rodney Hunt Rope Washer.

Narrow Fabric Equipment consisting of: Washer, 2 kettles, 3 stainless steel cans.

Complete Sargent 4 bowl scouring unit with dryer & duster.

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1—3-roll Ribbon Calender.
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1—P & W Single Blade Shear 60".

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3—V. V. 4' stainless steel lined dye becks, complete with motors and drives. New all S.S. Dye Becks, 4'20' long.
4—60" S.S. Dye Jiggs.

complete knitting plant.
complete Hosiery Dye. & Fin. Plant.

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10 S & L Narrow Fabric Looms.

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3—Tubing & Measuring Machines 50"-60".

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Lot of Hosiery Knitting Machines.
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1—Woonsocket Single Beater Breaker Picker.
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1—Whitin 40" Finisher Picker.
30—56" Fisher automatic Feeds.
3—C & M 40" & 42" Fearnaught Pickers.
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40—Whitin Spinners, 204 spindles, 4" gauge.
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1—Sipp 80 spindle Winder.
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72" wide—Emerson Motor
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29 Tinned Steel Cans 144" Face x 24" Dia. Butterworth—3 Section Vertical

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Includes Pumps & Foxboro Temp. Clock—Also Roll Up Machine—72"

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Will Take Cloth Up To 90" Complete with Folder & Sewing Machine & Motor

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72"

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Model "C"—Serial 425000—Series—40" Width

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85½" High—108" Long—7" Spindle—Centers for 220 Ends—3¼" Spindle—Centers for 440 Ends—Takes Paper Tubes

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All Belt Drive from 5 H.P. Motor—66" Wide

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Or Compressor made by Worcester Warp Compressing Machine Co.—48" wide with Jack Spool Stand—5 digit Veeder Root yardage counter

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Double 60" Width
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Equipped with Both Reel & Spreaders

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CALENDER, 3 roll 70" face
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DYEING MACHINE, Smith Drum Pocket type
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1—Butterworth 7 bowl hydraulic calender, 80" face, chilled iron and cotton bowls

1—Perkins 6 bowl hydraulic calender, 42" face, 2 chilled iron and 4 wool paper bowls

1—Butterworth 6 bowl lever set, 80" face, 3 chilled iron and 3 cotton bowls

1—Butterworth 6 bowl lever set, 80" face, 3 brass and cotton bowls

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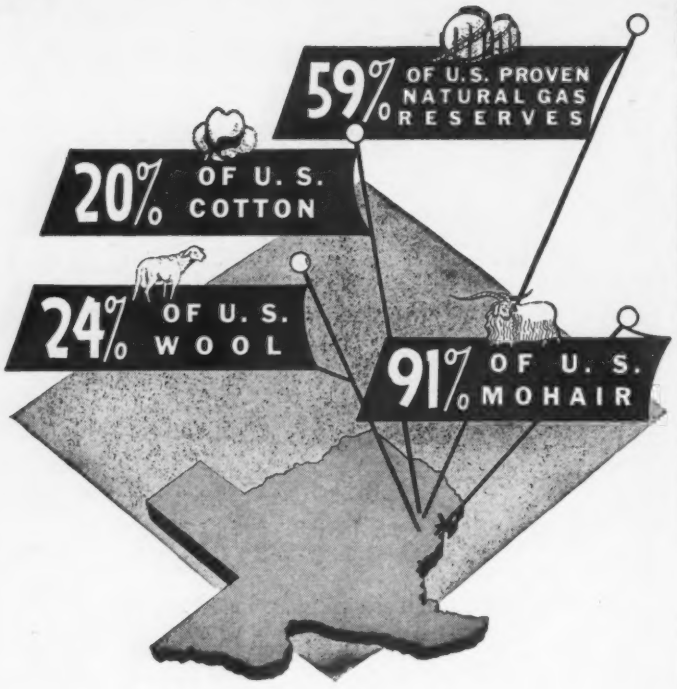

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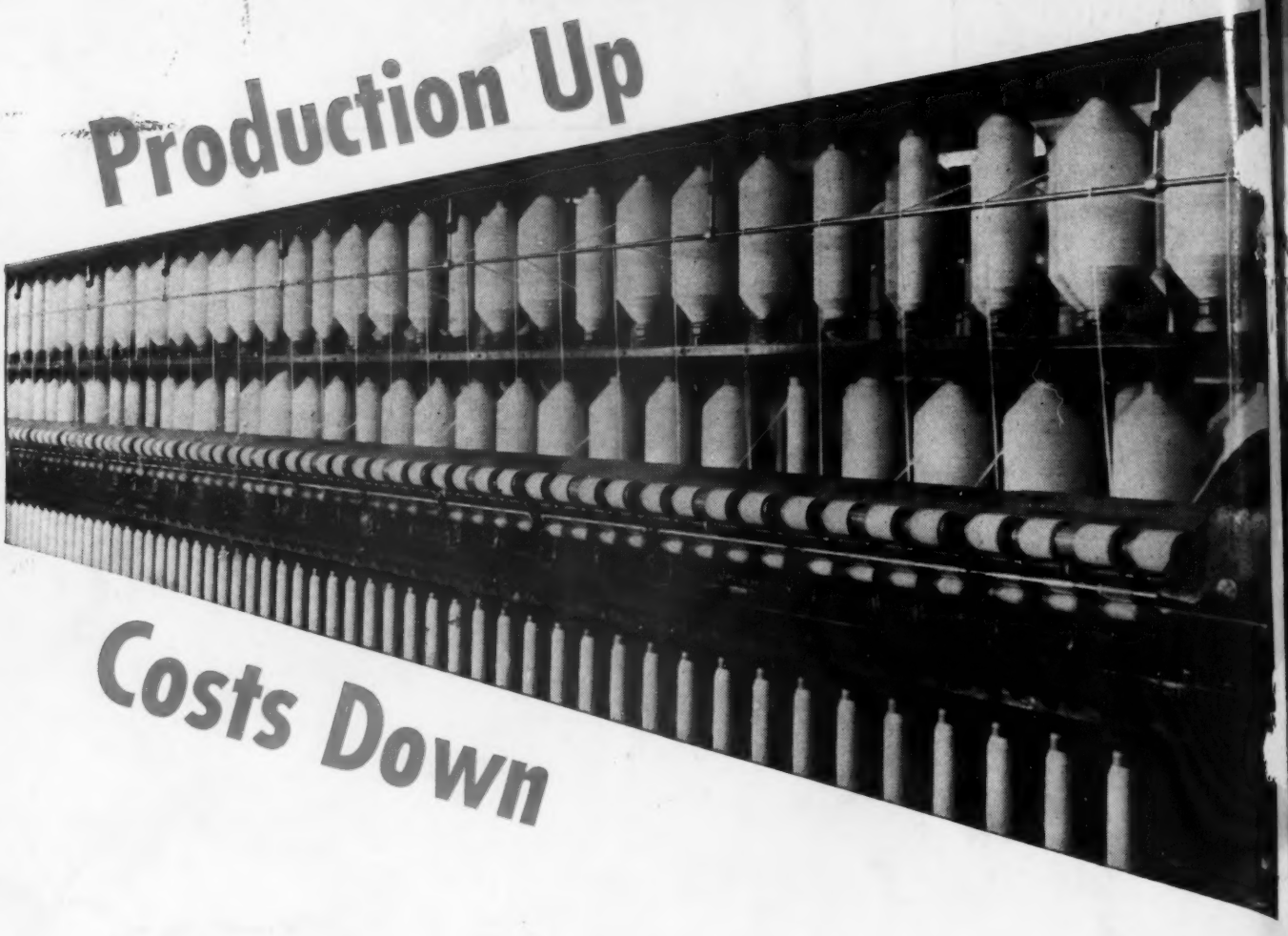

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